Street Traffic Studies, Ltd.

SUPPLEMENTAL PEDESTRIAN ANALYSIS
SILVER SPRING REGIONAL LIBRARY
MONTGOMERY COUNTY, MARYLAND

Prepared For:
Montgomery County Department of Public Libraries

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STS Job No.: 5790

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INTRODUCTION

The Montgomery County Department of Public Libraries is relocating the existing Silver Spring Library from its present location at the corner of Colesville Road and Spring Street to the southwest quadrant of the intersection of Fenton Street and Wayne Avenue, in the Silver Spring area of Montgomery County, Maryland. The overall project will include a 65,000 square foot library, a 20,000 square foot arts center, and 15,000 square feet of office space for use by the Montgomery County government, as well as a future separate project with 146 residential hi-rise units and 22,000 square feet of retail space.

It is anticipated that a total of 108 person trips (pedestrians) will be generated during the evening peak hour (to and from the library). Combining these trips with the existing pedestrian movements at the intersection of Fenton Street and Wayne Avenue results in a peak hour flow of 245 pedestrians within the west leg crosswalk. This value can easily be accommodated with the existing facilities available at the intersection. The estimated pedestrian volumes would result in a Level of Service "C" applying methodologies found in the 2000 Edition of the Highway Capacity Manual (HCM).

EXISTING CONDITIONS

Existing Roadway Network

The proposed Silver Spring Library development site is served regionally by Colesville Road (US 29) and Georgia Avenue (MD 97). Local access is provided by Fenton Street and Wayne Avenue. The characteristics of these roads are described below.

Colesville Road (US 29) is a major road in the state highway system. It starts in Howard County and winds through Montgomery County to its terminus at Sixteenth Street at the Montgomery County/District of Columbia border. In the vicinity of the site it is generally a variable width undivided roadway with reversible lanes for peak direction traffic. Colesville Road serves as a major north-south commuter route. The posted speed limit in the vicinity of the site is 30 mph.

Georgia Avenue (MD 97) is also a major road in the state highway system. It follows a generally north-south orientation and has a six-lane divided cross section. Georgia Avenue extends northward from the District of Columbia and travels through Montgomery County into Carroll County, Maryland. Georgia Avenue also acts as a major commuter link between Montgomery County and the District of Columbia.

Fenton Street is an arterial roadway in the Montgomery County Master Plan of Highways. It has a north-south orientation and serves as an alternate route for north-south travel within the Silver Spring Central Business District (CBD). Fenton Street extends southward from its terminus at Cameron Street into the town of Takoma Park. It has a posted speed limit of 25 mph.

Wayne Avenue is also an arterial roadway in the Montgomery County Master Plan of Highways. It will serve as the main access for parking for the project. Montgomery County Garage #60 will act as the primary parking supply for the project.

TRANSIT OPPORTUNITIES

The Silver Spring CBD is served by the Washington Metropolitan Area Transit Authority's (WMATA) Silver Spring Metro Station, WMATA regional bus service, Montgomery County's RideOn bus service, and the Maryland Transit Administration's MARC commuter rail service.

The Silver Spring Metro Station (Red Line) is located at the intersection of Colesville Road and Wayne Avenue. Service is provided at three to six minute headways during the peak periods and twelve minute headways during non-peak periods.

MARC commuter rail service is provided on three lines which serve the Washington - Baltimore corridor and terminates at the WMATA Union Station Metro Station in the District of Columbia. MARC platforms are located within the Silver Spring Metro Station, and service is provided during peak commuting periods only.

WMATA regional bus service is operated throughout the CBD with all lines stopping at the Silver Spring Metro Station. WMATA currently operates routes J1, J2, and J3 between Silver Spring and the Montgomery Mall Transit Center. The J5 route operates between Silver Spring and the Twinbrook Metro Station.. Routes Y5, Y7, Y8 and Y9 operate between Silver Spring and Montgomery General Hospital in Olney, Maryland. Additionally, WMATA operates routes F4 and F6 between Silver and the New Carrollton Metro Station.

Montgomery County's RideOn service operates numerous routes, all with stops at the Silver Spring Metro Station, including Route 28 (Van Go) which operates as a free local shuttle within the Silver Spring CBD. Overall, the area is well served by transit with direct connections to the Silver Spring Metro Station.

In addition, the Purple Line Light Rail will also serve the site, with a stop along Fenton Street.

The above opportunities enhance access to the relocated library. It should also be noted that there is an existing bus stop and shelter at the intersection of Fenton Street and Wayne Avenue in the southwest quadrant. There is a second bus stop at the intersection of Fenton Street and Bonifant Street.

EVALUATION OF ALTERNATIVES

Maryland National Capital Park & Planning Commission Suggestions

The Maryland National Park & Planning Commission (MNCPPC) of Montgomery County has requested a review of two modifications to the existing operations at the critical intersection of Fenton Street and Wayne Avenue. First, staff has requested a review of an all pedestrian phase or "Barnes Dance" at the intersection, and secondly a review of the inclusion of a pedestrian median refuge. A discussion of each suggestion is provided below.

Barnes Dance Pedestrian Operation

The Barnes Dance concept involves the elimination of vehicles from the movement of pedestrians. In effect, this creates a separate (additional) phase for the traffic signal operation. Based on total traffic conditions, the subject intersection is currently projected to operate at Levels of Service "E" (CLV of 1473) and "D" (CLV of 1423), for vehicular traffic, during the morning and evening peak hours after completion of the library and other planned developments in the greater Silver Spring area. Inclusion of an additional phase to the traffic signal would equate to an increase of 545 critical lane movements (CLV) movements. A value of 545 CLV movements equates to the total time required to allow a diagonal crossing of the farthest distance at the intersection. This would operate as 7 seconds of Walk time, 30 Seconds of Flashing Don't Walk time and 3 seconds of clearance before the next phase in the cycle. The addition of 545 CLV movements would result in a Level of Service F during each peak hour, with a maximum CLV value of 2018. This value not only represents Level of Service "F", it exceeds the Policy Area Threshold value of 1800. In addition, the subject location would become the most congested intersection in the County, based on the 2009 Highway Mobility report (a MNCPPC publication). All vehicular traffic would be required

to experience an additional 40 seconds of delay, and Purple Line operations would also be impacted. Therefore, for these reasons, we do not recommend a Barnes Dance for pedestrian movements at the subject location.

Pedestrian Median Refuge

MNCPPC staff suggested installation of a pedestrian refuge island at the intersection of Fenton Street and Wayne Avenue.

It is important to note that the use of a pedestrian refuge at the subject location would require installation of a median, loss of a travel lane, or a reduction in width of the existing lanes. STS LTD evaluated the impact of the loss of the existing left turn lane to create a refuge island. The introduction of a median along Wayne Avenue would increase the CLV of the intersection since left turning vehicles would be shifted into the eastbound thru lanes, thus increasing the volumes of traffic being served by the existing two thru lanes.

The loss of a full travel lane would have a more adverse impact, because the overall capacity of the Wayne Avenue would be reduced. That is, eastbound Wayne Avenue would be reduced to one travel lane. Furthermore, a single travel lane would create queues which would impact access to Garage #60. That is, the eastbound queue would extend beyond the driveway(s) which serve Garage #60, thus access to and from the garage would be restricted. Reducing the width of the existing travel lanes is not feasible, since it would not result in a sufficient width median. MNCPPC staff recommends a median width of eight (8) feet for pedestrian storage, and a minimum of 6 feet is desired. A reduction to ten (10) foot travel lanes would yield only a four (4) foot median. Thus, the MNCPPC standard would not be met. Finally, pedestrian traffic signals within Montgomery County are timed to allow a full crossing of the width of the roadway, without the need to stop within the crosswalk.

PEDESTRIAN ANALYSIS

MNCPPC has requested a specific review of pedestrian movements at the intersection Wayne Avenue and Fenton Street to ensure adequate pedestrian capacity at the location once the library has relocated to the intersection. Pedestrian movement data was collected at the existing library, as well as the intersection of Wayne Avenue and Fenton Street.

Pedestrian movements at the new location, Wayne Avenue and Fenton Street, were observed on Thursday, April 16, 2009. Based on this data the crosswalk located on the west leg of the intersection (this crossing is anticipated to be used by future library visitors) is currently serving a maximum of 137 pedestrian movements (two-way) in the evening peak hour.

The data collection at the existing library facility was conducted on Wednesday, April 22, 2009, to evaluate person trips at the library entrances during the peak periods. Based on the data, we anticipate a total of 108 person trips; i.e. pedestrians during the evening peak hour (to and from the library).

Combining these trips with the existing crossings results in a peak hour flow of 245 pedestrians within the west leg crosswalk. This value can easily be accommodated with the existing facilities available at the intersection. The estimated volumes would result in a Level of Service "C" applying methodologies found in the Highway Capacity Manual (HCM). A second scenario was reviewed to account for any increases associated with the Purple Line. The Traffic Analysis Technical Report, dated September 2008, prepared for the Purple Line estimated a daily total of 700 boardings at the Fenton Street Station in 2030. The Maryland Transit Administration (MTA) consultant's project the peak hour will be about 12% of the daily value or 84 boardings. Given the these trips will arrive from all directions towards the station, STS LTD estimated that 30% of the pedestrian trips will use the subject crosswalk. Thus, it is estimated that an additional

25 peak pedestrian movements will occur. Adding this value to the 245 results in a total of 270 movements per hour (two-way). Again, this level of pedestrians can be adequately accommodated. As a measure of pedestrian movements in the area, STS LTD reviewed maximum pedestrian crossing at other Silver Spring CBD intersections. A review of the intersection of Colesville Road and Georgia Avenue indicated that a maximum of 424 pedestrian movements occur during the evening peak hour for the south leg crossing, a crosswalk similar to the subject location. This value well exceeds the maximum estimated volume of 270 pedestrians per hour. Therefore, it is our opinion that the subject crosswalk will operate at an acceptable level after completion of the library and Purp Line Light Rail.

Furthermore, the intersection of Wayne Avenue and Fenton Street currently has countdown pedestrian signals which enable pedestrians to discern the amount of time remaining to cross the intersection safely. It is important to note that the total pedestrian crossing time at a signalized crossing is made up of both the WALK (white hand) and the FLASHING DON'T WALK (flashing orange hand or countdown time in seconds) time period.

ACCIDENT HISTORY

A review of accident history for the intersection of Fenton Street and Wayne Avenue for the period January 2003 through December 2007 indicated a total of 56 accidents at or near the intersection during the five (5) year period, an average of about 11 accidents per year.

There were a total of two (2) accidents involving a pedestrian at the intersection. One occurred in April 2005, and the other October 2006. Each accident involved a single vehicle. Given the lack of a pattern of pedestrian related accidents, and the absence of a reported accident in the last year of available data, it is our opinion that pedestrian safety is not a concern at this time. Notwithstanding, further studies will be undertaken after completion of the Purple Station to ensure adequate pedestrian safety in the future.

CONCLUSIONS

The foregoing analyses demonstrate that the relocated Silver Spring Library will not adversely effect pedestrian movements within the immediate vicinity of the intersection of Wayne Avenue and Fenton Street.

A review of MNCPPC suggestions demonstrates that the use of a refuge island would adversely impact vehicular operations and produce queues which, in turn, would impact access to Garage #60 which serves the library. Also, the use of a Barnes Dance movement for pedestrians would create excessive delays for both passenger and transit vehicles (Purple Line). In addition, the intersection would operate at Level of Service "F" during the peak periods, and become the worst operating location in the County based on the 2009 Highway Mobility report.

It is anticipated that a total of 108 person trips (pedestrians) will be generated during the evening peak hour (to and from the library). Combining these trips with the existing pedestrian movements at the intersection of Fenton Street and Wayne Avenue results in a peak hour flow of 245 pedestrians within the west leg crosswalk. This value can easily be accommodated with the existing facilities available at the intersection. The estimated volumes would result in a Level of Service "C" applying methodologies found in the 2000 Edition of the Highway Capacity Manual (HCM). Therefore, the pedestrian analyses concluded that operations can be accommodated at the existing crosswalk with optimal levels of service for pedestrian movements. In addition, accident history for the critical intersection of Fenton Street and Wayne Avenue produced no evidence of any pedestrian/vehicle conflicts. Thus, we can anticipate a continued safe environment for pedestrians given the existing countdown pedestrian signals and adequate crosswalk markings.

APPENDIX A

BARNES DANCE EVALUATION

Fenton St @ Wayne Ave

Diagonal crossing distance (from scaled plan)

105'

105 / 3.5 = 30

W 7
FDW 30
clr 3
40"

40" ≡ 545 clv

545 / 30 = 18.16 x 2.2 = 40

West leg Pedestrian movements

Existing = 137 pm peak (2-way)

Library to add 108

245

	AM	PM
Existing	1047	983/A
Total	1473	1423/D
		+545
w/ Barn Dance		1968/F

PROPOSED SIGNS

22,24,25,29

R10-11A
24"x30"

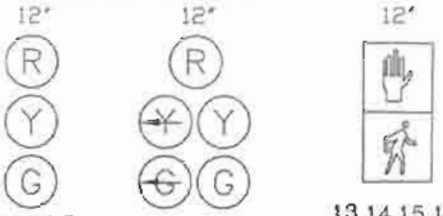
27

R10-12
24"x 30"

30

R3-5R
30"x36"

PROPOSED SIGNALS



1,2,3,4,5,
6,7,8,9,12

10,11

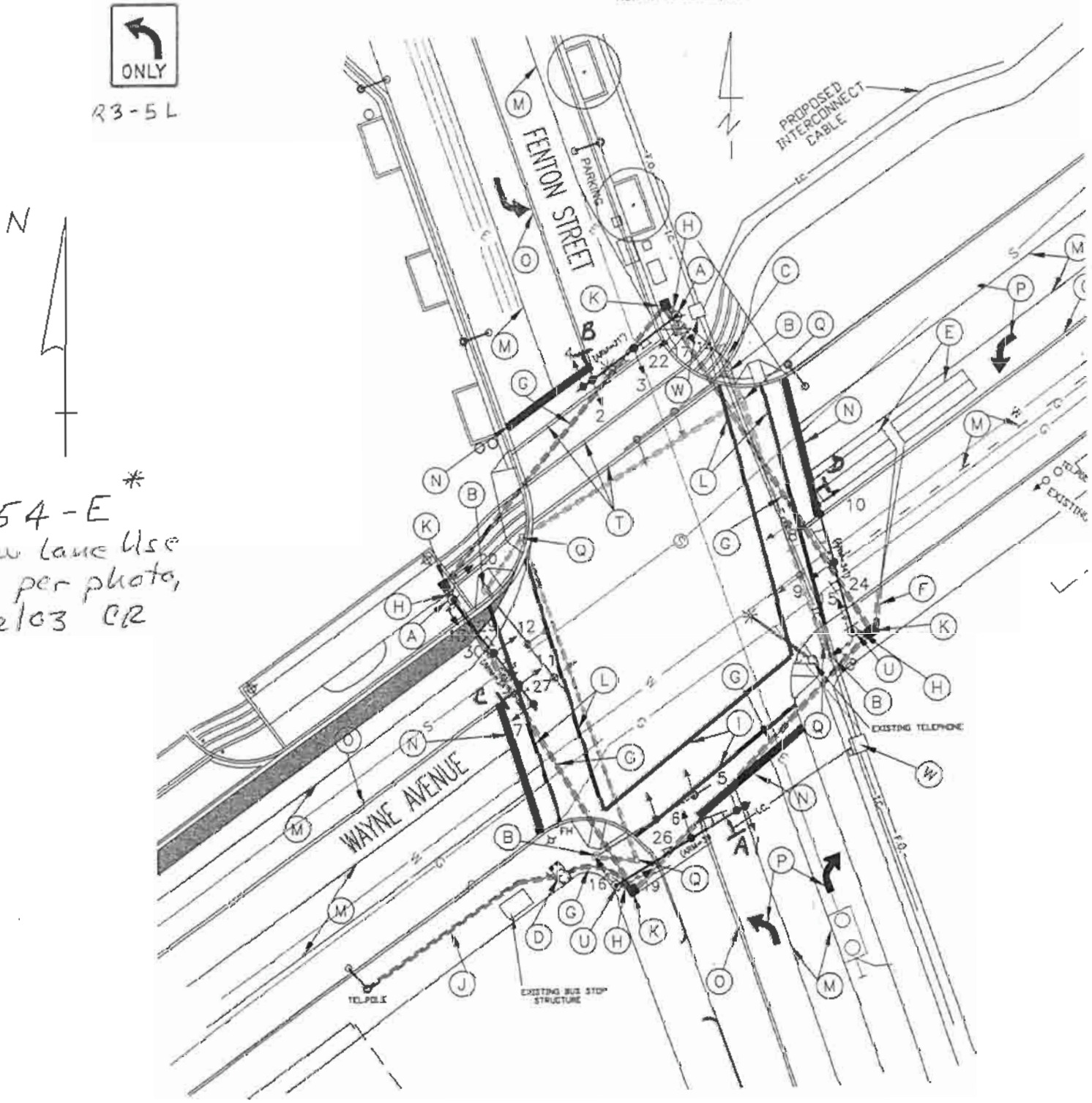
13,14,15,16
17,18,19,20

ALL SIGNALS SHALL BE EQUIPPED WITH BACKPLATES.
ALL SIGNALS LENSES SHALL BE 12" GLASS.

A, B, C, D

R3-5L

FENTON STREET IS ASSUMED TO
RUN IN A NORTH/SOUTH DIRECTION



54-E *
New Lane Use
As per photo,
4/12/03 CR

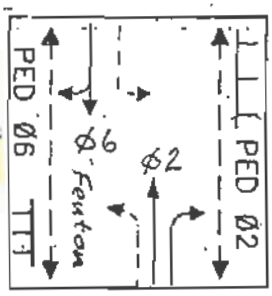
FENTON STREET RUNS IN A NORTH–SOUTH DIRECTION

SEQUENCE OF OPERATION SHEET
TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

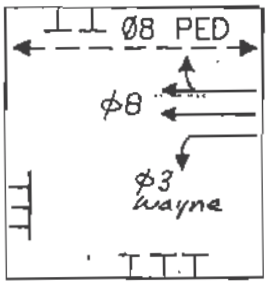
INTERSECTION: FENTON STREET AND WAYNE AVENUE. No. 54-E*

PHASING DIAGRAM

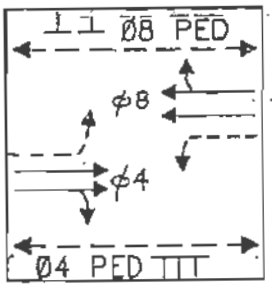
2+6



3+8



4+8



SIGNAL NO.	SIGNAL HEAD INDICATIONS		
	1-9,12	10,11	P13-20
TOTAL:	10	2	8
LEGEND: OPTICALLY LIMITED; R RED; Y YELLOW; G GREEN; ← ARROW; F FLASHING	R Y G 12"	R ←Y Y ←G G 12"	9"or 12" X

Count down Peds INSTALLED ON 10/15/02 + Audible Peds

SIGNAL NO.	SEQUENCE OF OPERATION INTERVAL 1	2	3	4	5	6	7	8	9	10	11	12	FLASH
1	G	G	Y	R	R	R	R	R	R	R	R	R	Y
2	G	G	Y	R	R	R	R	R	R	R	R	R	Y
3	G	G	Y	R	R	R	R	R	R	R	R	R	Y
4	G	G	Y	R	R	R	R	R	R	R	R	R	Y
5	G	G	Y	R	R	R	R	R	R	R	R	R	Y
6	G	G	Y	R	R	R	R	R	R	R	R	R	Y
7	R	R	R	R	R	R	R	G	G	G	Y	R	R
8	R	R	R	R	R	R	R	G	G	G	Y	R	R
9	R	R	R	R	R	R	R	G	G	G	Y	R	R
10	R	R	R	R	~~G~~	~~←G~~	G	G	G	G	Y	R	R
11	R	R	R	R	~~G~~	~~←G~~	G	G	G	G	Y	R	R
12	R	R	R	R	G	G	G	G	G	G	Y	R	R
13	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
14	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
15	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
16	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
17	DW	DW	DW	DW	W	W	W	W	DWF	DW	DW	DW	
18	DW	DW	DW	DW	DW	DW	DW	W	DWF	DW	DW	DW	
19	DW	DW	DW	DW	DW	DW	DW	W	DWF	DW	DW	DW	
20	DW	DW	DW	DW	W	W	W	W	DWF	DW	DW	DW	
PHASE	Ø2 + 6			ALL RED	Ø3 + 8		ALL RED	Ø4 + 8				ALL RED	

9/19/2005 LED Retrofit for signal 1-12 R+G BALLS Plus R+G Arrows

E* for new lane Use after restriping. As per photo on 4-12-03 ER No Ø ing changes.

SUBMITTED: C. Romaine 4/7/00 CHECKED: _____ APPROVED: B. Gonzales 4.10.00

IN SERVICE BY: JS DATE: 8.3.00 TIME: 1300

TRAFFIC SIGNAL TIMING SHEET
TRAFFIC OPERATIONS SECTION
Division of Traffic Engineering
Montgomery County, Maryland

EPAC300 PROGRAM LOG
CH - 3 R/U: 2

INTERSECTION: FENTON ST. & WAYNE AVE.

NO. I- 54 - 5.0

EAGLE SIGNAL CONTROLS

TRAFFIC PRODUCT DATA

	STREET/MOVEMENT							
		NB Fenton	WBLT Wayne	EB Wayne		SB Fenton		WB Wayne
PHASE	1	2	3	4	5	6	7	8
PHASE DATA - VEHICLE TIMINGS								
Minimum Green	—	7	3	3	—	7	—	3
Passage	—	0	3	0	—	0	—	0
Basic Maximum No. 1	—	40	10	25	—	40	—	25
Times Maximum No. 2	—	60	30	40	—	60	—	40
Yellow Change	—	4	3	4	—	4	—	4
Red Clearance	—	1	1	1	—	1	—	1
Seconds/Actuation	0	0	0	0	0	0	0	0
Maximum Initial	0	0	0	0	0	0	0	0
Density Time B4 Reduction	0	0	0	0	0	0	0	0
Times Cars B4 REduction	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0
Minimum Gap	0	0	0	0	0	0	0	0
PHASE DATA - PEDESTRIAN & VEHICLE CONTROL								
Ped. Walk	—	7	0	7	—	7	—	7
Times Pedest. Clearance	—	10	0	10	—	10	—	10
Ped. Flashing Walk	0	0	0	0	0	0	0	0
Cont. Ext Ped Clear	0	0	0	0	0	0	0	0
Act Rest In Walk	0	0	0	0	0	0	0	0
Non-Lock Memory			1					
Veh. Dual Entry	0	1	0	1	0	1	0	1
Cont. Last Car Passage	0	0	0	0	0	0	0	0
Conditional Serv	0	0	0	0	0	0	0	0

Pedestrian & Vehicle Control Entry: "1" = Yes & "0" = No

PROGRAM

FLASH: 24 HOUR COLOR
On Line = Max II, Non Act II
Off Line = Max 1, Free Operation
Emergency Flash
Stop Time
Spec. Function 1
Spec. Function 2 (Inhibit Max)

NOTES

- Ped Recycle ϕ2 + ϕ6 - Hold ϕ2 + ϕ6
- AUDIBLE PEDS for ϕ2 + ϕ6 WALK (APS on PEDS)
- COUNTDOWN PED SIGNALS WERE INSTALLED ON ALL PED PHASES 10/15/02
- "COUNTDOWN PED SIGNALS INSTALLED 10/15/02

SUBMITTED BY CR DATE 6-23-00 CHECKED BY _____ DATE _____ APPROVED BY BG DATE 6-28-00
IN SERVICE BY 781 DATE 8/3/00 TIME 1027 CHECKED BY 760 DATE 8/3/00 TIME 1030

Data Report for Signal 54

4/21/2008

Signal Number	Name	Pri Group	Ch.	RU	Auto Cyc.	Auto Coord Low	Auto Coord High	Low Thres (sec)	High Thres (sec)
54	FENTON-WAYNE	5	3	2	10	False	False	0	255

Computer Phases

Number	Name	Guar Green	Clear	Yellow	Red	Walk	Dont Walk	Min Green	Max Green
1	NB-Sb Fenton St.	10	5	4	1	7	10	10	60
2	WBLT Wayne Ave.	13	4	3	1	0	0	3	30
3	Eb-Wb Wayne Ave.	17	5	4	1	7	10	3	40

Timing Profile

Offset	Split Num.	Index	1 %	2 %	3 %	4 %	5 %	
94	1	1	36	32	32			
94	2	1	36	32	32			
94	3	1	36	32	32			
94	4	1	36	32	32			
63	5	5	35	32	33			– 1100 midday & late night 44/32/32
89	6	6	45	25	30			
63	7	7	40	22	38			
79	8	8	39	26	35			
79	9	9	40	24	36			– 1200 AM 53/14/39
79	10	10	35	24	41			– 1200 PM 47/14/45
89	11	11	35	35	30			
89	12	12	35	24	41			
89	13	13	35	24	41			
89	14	14	30	30	40			
89	15	15	35	24	41			
89	16	16	35	24	41			

Computer Splits

Number	P1%	P2%	P3%	P4%	P5%
1	36	32	32		
2	35	32	33		
3	45	25	30		
4	40	22	38		
5	35	32	33		
6	45	25	30		
7	40	22	38		
8	39	26	35		
9	40	24	36		
10	35	24	41		
11	35	35	30		
12	35	24	41		
13	35	24	41		
14	30	30	40		
15	35	24	41		
16	35	24	41		

VEHICLE TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Fenton St
and: Wayne Ave
Counted by: RW & EZ

Location : Montgomery Co
Date : 4/16/09 Day: Thursday
Weather : Clear
Entered by: CFC

STREET TRAFFIC STUDIES LTD

TIME	TRAFFIC FROM NORTH on: Fenton St				TRAFFIC FROM SOUTH on: Fenton St				TRAFFIC FROM WEST on: Wayne Ave				TRAFFIC FROM EAST on: Wayne Ave				TOTAL N + S + E + W
	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	RIGHT	THRU	LEFT	TOTAL	LEFT	THRU	RIGHT	TOTAL	
AM																	
06:30-45	12	26	1	39	5	23	8	36	4	8	2	14	16	60	2	78	167
45-00	6	27	2	35	16	35	8	59	7	13	2	22	25	83	1	109	225
07:00-15	7	36	7	50	10	42	5	57	4	16	5	25	31	74	7	112	244
15-30	13	52	4	69	9	33	4	46	6	14	6	26	38	109	4	151	292
30-45	16	52	5	73	9	57	9	75	4	33	4	41	55	116	2	173	362
45-00	12	66	1	79	21	45	11	77	11	31	4	46	59	163	7	229	431
08:00-15	15	64	8	87	20	68	11	99	10	14	6	30	59	141	6	206	422
15-30	19	60	6	85	21	61	23	105	12	28	5	45	78	162	7	247	482
30-45	17	52	6	75	25	61	11	97	9	33	7	49	60	148	3	211	432
45-00	18	57	5	80	20	63	18	101	7	41	3	51	63	151	8	222	454
09:00-15	29	78	7	114	25	86	25	136	18	33	10	61	68	152	10	230	541
15-30	20	58	2	80	35	98	38	171	9	30	6	45	59	136	6	201	497
AM 3 HOUR TOTALS	184	628	54	866	216	672	171	1059	101	294	60	455	611	1495	63	2169	4549
1 HOUR TOTALS																	
630-730	38	141	14	193	40	133	25	198	21	51	15	87	110	326	14	450	928
645-745	42	167	18	227	44	167	26	237	21	76	17	114	149	382	14	545	1123
07-08	48	206	17	271	49	177	29	255	25	94	19	138	183	462	20	665	1329
715-815	56	234	18	308	59	203	35	297	31	92	20	143	211	529	19	759	1507
730-830	62	242	20	324	71	231	54	356	37	106	19	162	251	582	22	855	1697
745-845	63	242	21	326	87	235	56	378	42	105	22	170	256	614	23	893	1767
08-09	69	233	25	327	86	253	63	402	38	116	21	175	260	602	24	886	1790
815-915	83	247	24	354	91	271	77	439	46	135	25	206	269	613	28	910	1909
830-930	84	245	20	349	105	308	92	505	43	137	26	206	250	587	27	864	1924
PEAK HOUR 830-930	84	245	20	349	105	308	92	505	43	137	26	206	250	587	27	864	1924
PM																	
04:00-15	16	71	21	108	11	79	63	153	19	84	18	121	60	78	13	151	533
15-30	20	73	18	111	5	54	50	109	26	91	23	140	68	88	15	171	531
30-45	17	69	13	99	6	61	57	124	26	88	19	133	56	86	21	163	519
45-00	17	78	17	112	6	56	48	110	31	115	16	162	59	87	18	164	548
05:00-15	18	73	14	105	7	78	66	149	32	108	20	160	62	77	15	154	588
15-30	16	67	8	91	6	64	53	123	36	132	20	188	69	113	27	209	611
30-45	28	61	9	98	15	76	74	165	22	102	18	142	65	80	16	161	566
45-00	28	71	14	113	12	72	40	124	26	131	17	174	70	98	30	198	609
06:00-15	26	74	8	108	12	98	67	177	21	129	25	175	75	78	30	183	643
15-30	29	49	16	94	8	84	55	147	22	130	21	173	68	99	25	192	606
30-45	24	65	17	106	8	85	65	158	16	142	21	179	54	87	20	161	604
45-00	23	65	13	101	8	82	56	146	20	94	26	140	59	91	27	177	564
PM 3 HOUR TOTALS	262	816	168	1246	104	887	694	1685	297	1348	244	1887	765	1062	257	2084	6902
1 HOUR TOTALS																	
04-05	70	291	89	430	28	250	218	496	102	378	76	556	243	339	67	649	2131
415-515	72	293	62	427	24	247	221	492	115	402	78	595	245	338	69	652	2165
430-530	68	287	52	407	25	257	224	506	125	443	75	643	246	363	81	690	2246
445-545	79	279	48	406	34	272	241	547	121	457	74	652	255	357	76	688	2293
05-06	90	272	45	407	40	288	233	561	116	473	75	664	266	368	88	722	2354
515-615	98	273	39	410	45	310	234	589	105	494	80	679	279	369	103	751	2429
530-630	111	255	47	413	47	330	236	613	91	492	81	664	278	355	101	734	2424
545-645	107	259	55	421	40	339	227	606	85	532	84	701	267	362	105	734	2462
06-07	102	253	64	409	36	349	243	628	79	495	93	667	256	355	102	713	2417
PEAK HOUR 545-645	107	259	55	421	40	339	227	606	85	532	84	701	267	362	105	734	2462

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PEDESTRIAN COUNT - SUMMARY

Location: Montgomery Co
Intersection of: Fenton St
and: Wayne Ave
Counted by: RW & EZ
Date: 4/16/09 Day: Thursday
Weather: Clear
Entered By: CFC

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG		
TIME	EB	WB	NB	SB	EB	WB	NB	SB	TOTAL
AM									
06:30-45	0	1	1	0	0	3	0	1	6
45-00	4	6	2	0	0	9	3	2	26
07:00-15	3	5	4	3	2	15	1	2	35
15-30	2	4	3	4	1	8	3	0	25
30-45	2	8	5	3	2	11	5	8	44
45-00	3	9	8	3	1	8	1	3	36
08:00-15	9	6	6	8	2	5	4	1	41
15-30	6	4	2	6	0	11	2	4	35
30-45	8	7	0	0	0	6	1	6	28
45-00	5	12	5	6	1	6	1	8	44
09:00-15	7	13	1	4	0	15	3	2	45
15-30	6	12	5	1	1	10	1	8	44
AM 3 HOUR TOTALS	55	87	42	38	10	107	25	45	409
1 HOUR TOTALS									
630-730	9	16	10	7	3	35	7	5	92
645-745	11	23	14	10	5	43	12	12	130
07-08	10	26	20	13	6	42	10	13	140
715-815	16	27	22	18	6	32	13	12	146
730-830	20	27	21	20	5	35	12	16	156
745-845	26	26	16	17	3	30	8	14	140
08-09	28	29	13	20	3	28	8	19	148
815-915	26	35	8	16	1	38	7	20	152
830-930	26	44	11	11	2	37	6	24	161
PEAK HOUR 830-930	26	44	11	11	2	37	8	24	161
PM									
04:00-15	17	9	8	6	7	3	4	18	72
15-30	7	8	6	11	3	5	8	20	68
30-45	10	16	9	5	2	3	6	18	69
45-00	11	6	12	2	3	5	10	10	59
05:00-15	22	16	8	17	3	2	11	20	99
15-30	10	15	7	5	2	10	12	22	83
30-45	14	9	6	9	7	14	1	30	90
45-00	16	15	14	5	3	7	7	19	86
06:00-15	21	22	14	5	8	7	18	23	116
15-30	13	15	16	15	2	3	10	25	99
30-45	16	14	17	16	6	9	14	21	113
45-00	14	12	10	11	10	6	14	8	85
PM 3 HOUR TOTALS	171	157	127	107	54	74	115	234	1039
1 HOUR TOTALS									
04-05	45	39	35	24	15	16	28	66	268
415-515	50	46	35	35	11	15	35	68	295
430-530	53	53	36	29	10	20	39	70	310
445-545	57	46	33	33	15	31	34	82	331
05-06	62	55	35	36	15	33	31	91	358
515-615	61	61	41	24	18	38	38	94	375
530-630	64	61	50	34	18	31	36	97	391
545-645	66	66	61	41	17	26	49	88	414
06-07	64	63	57	47	24	25	56	77	413
PEAK HOUR 645-645	66	66	61	41	17	26	49	88	414

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PEDESTRIAN COUNT - SUMMARY

Intersection of:	Fenton St	Location:	Montgomery Co	
and:	Wayne Ave	Date:	9/24/09	Day: Thursday
Counted by:	RW	Weather:	Clear	
		Entered By:	CFC	

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG		
TIME	EB	WB	NB	SB	EB	WB	NB	SB	TOTAL
AM									
11:00-15	11	5	6	2	2	8	2	4	40
15-30	3	13	17	6	2	1	13	8	61
30-45	6	5	6	1	6	5	11	8	48
45-00	9	14	3	3	0	5	8	13	55
12:00-15	7	7	12	6	0	8	6	10	56
15-30	11	13	7	7	8	2	5	18	71
30-45	7	6	14	7	3	12	10	12	71
45-00	12	9	13	11	4	9	13	10	81
01:00-15	19	6	15	13	4	6	2	13	78
15-30	19	14	4	10	4	8	10	14	83
30-45	19	11	3	3	1	2	6	15	60
45-00	20	14	10	7	3	4	12	15	85
PM									
3 HOUR TOTALS	143	117	110	76	37	70	98	138	789
1 HOUR TOTALS									
11-12	29	37	32	12	10	19	34	31	204
1115-1215	25	39	38	16	8	19	38	37	220
1130-1230	33	39	28	17	14	20	30	49	230
1145-1245	34	40	36	23	11	27	29	53	253
12-01	37	35	46	31	15	31	34	50	279
1215-115	49	34	49	38	19	29	30	53	301
1230-130	57	35	46	41	15	35	35	49	313
1245-145	69	40	35	37	13	25	31	52	302
01-02	77	45	32	33	12	20	30	57	306
PEAK HOUR									
1230-130	57	35	46	41	15	35	35	49	313

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PEDESTRIAN COUNT - SUMMARY

Intersection of:	Fenton St	Location:	Montgomery Co	
and:	Wayne Ave	Date:	9/26/09	Day: Saturday
Counted by:	BM	Weather:	Clear	
		Entered By:	CFC	

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG		
TIME	EB	WB	NB	SB	EB	WB	NB	SB	TOTAL
AM									
11:00-15	3	14	2	8	0	3	12	18	60
15-30	20	7	8	5	9	9	14	20	92
30-45	19	11	13	9	4	7	5	32	100
45-00	9	19	0	20	1	2	13	25	89
12:00-15	0	6	1	20	4	4	9	12	56
15-30	3	9	3	10	4	2	6	14	51
30-45	4	6	6	8	1	4	9	7	47
45-00	6	11	11	20	0	0	12	26	86
01:00-15	4	4	0	12	0	2	8	22	52
15-30	1	4	4	13	0	4	9	37	72
30-45	12	3	9	10	0	4	19	24	81
45-00	7	5	8	12	0	2	4	17	55
02:00-15	2	2	6	6	0	0	2	28	46
15-30	1	9	6	7	3	5	5	24	60
30-45	6	8	8	13	0	3	1	8	47
45-00	2	4	2	8	0	3	4	16	39
PM									
4 HOUR TOTALS	99	122	89	181	26	54	132	330	1033
1 HOUR TOTALS									
11-12	51	51	23	42	14	21	44	95	341
1115-1215	48	43	22	54	18	22	41	89	337
1130-1230	31	45	17	59	13	15	33	83	296
1145-1245	16	40	12	58	10	12	37	58	243
12-01	13	32	23	58	9	10	36	59	240
1215-115	17	30	22	50	5	8	35	69	236
1230-130	15	25	23	53	1	10	38	92	257
1245-145	23	22	24	55	0	10	48	109	291
01-02	24	16	21	47	0	12	40	100	260
115-215	22	14	27	41	0	10	34	106	254
130-230	22	19	29	35	3	11	30	93	242
145-245	16	24	28	38	3	10	12	77	208
02-03	11	23	22	34	3	11	12	76	192
PEAK HOUR									
11-12	51	51	23	42	14	21	44	95	341

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{file=CLVFL13g.WK1} } | From NORTH (Southbound) |<- Name of N-S Approach
Subdivision Case: | R Right Thru Left | Fenton St
Silver Spring Library | ^ 84 245 20 =VPH |<- If Split Phase:N-S!!
Traffic Condition: | R 0 1 1 #Lanes | Use "N","Y": n
Existing | ON LY | | | |:LV(N): | P eak Hour Period:
Date: Count | for r <- V -> 434 | AM
_____ ________ ________ __| RTOR 3 |___ _______ _____ _______
From WEST (Eastbound) 2 <=[WB receiving lanes] /\ From EAST (Westbound)
VPH #Lanes CLV (N-S)= 434 || #Lanes VPH R
Left 26 1 --^ SE B CLV (E-W)= 613 NB ^-- 1 27 Right
Thru 137 2 --> || | --- --------- --------- <-- 1 587 Thru
Right 43 0 --v V / SU M CLV= 1047 ok v-- 1 250 Left
R CLV(W)= 345 3 LOS= B | EB==> 1 CLV(E)= 613
_____ ________ ________ __ C LV(S): (ok-under 1,525) ___ _______ _____ _______
Name of E-W Approach h | 308 <- ^ -> |If free flow Rt->Vol=0
Wayne Ave | | | | |If # lanes=0, then:
If Split Phase:E-W!! | # Lanes= 1 1 1 | R ights use Thru Lane
Use "N","Y": n | VPH= 105 308 92 | L efts use Thru Lane
Date: 20-Jul Jul-09 | Left Thru Right R |MUST hit CALC-F9 >IBM
By: | From SOUTH (Northbound) |To Print Use: Alt "P"
C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g
Created by Ed Axler Pg=2
Created on: 9/14/87 | Lane Utilization Factors: | LOS: CLV># <CLV
Updated 6/22/92 | A pproach h Turning Movement | -------------- ---------- ----------

No .Lanes	Left	Thru	Rght
1 Lane	1.00	1.00	1.00
2 Lanes	0.53	0.53	0.53
3 Lanes	0.37	0.37	0.37
4 Lanes	0.29	0.29	0.29
5 Lanes	0.25	0.25	0.25

If any questions:
Call Ed Axler
at 1-301-495-4525
8787 Georgia Ave
Silver Spring, MD 20910-3760

LOS:	CLV>#	<CLV
A	0	978
A/B	977	1023
B	1022	1128
B/C	1127	1173
C	1172	1278
C/D	1277	1323
D	1322	1428
D/E	1427	1473
E	1472	1578
t E/F	1577	1623
F	1622	9999

--------- ------------- ----------- --- -- --------- --------- --------- -------- -- --|
\p {Calc}{Calc} v-Setup String vary w/printer |
/ppos{esc}\027\038\107\048\083~ <-as HP ThinkJet
bra1.a1~bca1.a20~qrb2.n20~agq{Quit} uit} now! |
--------- ------------- ----------- --- -- --------- --------- --------- -------- ,- ---

Turning Factors:	N(sb)	S(nb)	E(wb)	W(eb)		-Rights-	-RTOR-	-%RTOF
					N,sb	84	84	100%
Right Turns	1.0	1.0	1.0	1.0	S,nb	92	92	100%
Through Cars	1.0	1.0	1.0	1.0	E,wb	27	27	100%
Left Turns	1.0	1.0	1.0	1.0	W,eb	43	43	100%

C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g
Created by Ed Axler Does Consider Split Phasing Pg=3
Created on: 9/14/87 Does Right Turn Checks, too!!
Updated 1/12/89 With Streamline Format !

			LOS:	Pointer er <--
Updated 2/24/89		If #Lns=5,Use Factor=.25		
Updated 8/18/89		Improve Alt "P" Macro	A	0
Updated 8/30/89		Vary Turning Factors	A/B	0
Updated 9/25/89-10	8/9	Vary Lane use Factors	B	3 <--
Updated 1/31/90-11a	8/9	Vary LOS for CLV Value	B/C	3
Updated 2/14/90-11b	9	For MDSHA,0.6=2 Lft Lanes	C	3
Updated 2/20/90-11c	9b	Fix CLV-Split Calc, ?#22	C/D	3
Updated 2/22/90-11d	11a	Add "YES" to use Split	D	3
Updated 5/17/90-11d	11a	Add "MUST hit CALC"	D/E	3
Updated 9/26/90-11e	11a	Fix Doc.of Equations	E	3
Update 11/27/90-11f	11b	Thru can have 0 Lanes!!	E/F	3
Updated 5/31/91-12	11c	Check # Receiving Lanes	F	3

{file=CLVFL13g.WK1} } | From NORTH (Southbound) |<- Name of N-S Approach
Subdivision Case: | R Right Thru Left | Fenton St
Silver Spring Library | ^ 107 259 55 =VPH |<- If Split Phase:N-S!!
Traffic Condition: | R 0 1 1 #Lanes | Use "N","Y": n
Existing | ONLY | | |:LV(N): | Peak Hour Period:
Date: Count | for r <- V -> 406 | PM
_____ ________ ________ __| RTOR 3 |___ ________ ______ ______

From WEST (Eastbound) 2 <=[WB receiving lanes} /\ From EAST (Westbound)
VPH #Lanes CLV (N-S)= 406 || #Lanes VPH R
Left 84 1 --^ SEB CLV (E-W)= 577 NB ^-- 1 105 Right
Thru 532 2 --> || | --- ---------- ---------- <-- 1 362 Thru
Right 85 0 --v V / SUM CLV= 983 ok v-- 1 250 Left
R CLV(W)= 577 3 LOS= A/B | EB===> 1 CLV(E)= 446
_____ ________ ________ __ C LV(S): (ok-under 1,525) ___ ________ ______ ______

Name of E-W Approach h | 339 <- ^ -> |If free flow Rt->Vol=0
Wayne Ave | | | | |If # lanes=0, then:
If Split Phase:E-W!! | # Lanes= 1 1 1 | Rights use Thru Lane
Use "N","Y": n | VPH= 40 339 227 | Lefts use Thru Lane
Date: 20-Jul Jul-09 | Left Thru Right R |MUST hit CALC-F9 >IBM
By: | From SOUTH (Northbound) |To Print Use: Alt "P"

C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g
Created by Ed Axler Pg=2
Created on: 9/14/87 | Lane Utilization Factors: | LOS: CLV># <CLV
Updated 6/22/92 | Approach Turning Movement | -------------- ---------- ----------

No .Lanes	Left	Thru	Rght		LOS	CLV>#	<CLV
					A	0	978
	1 Lane	1.00	1.00	1.00	A/B	977	1023
If any questions:	2 Lanes	0.53	0.53	0.53	B	1022	1128
Call Ed Axler	3 Lanes	0.37	0.37	0.37	B/C	1127	1173
at 1-301-495-4525	4 Lanes	0.29	0.29	0.29	C	1172	1278
8787 Georgia Ave	5 Lanes	0.25	0.25	0.25	C/D	1277	1323
Silver Spring, MD 20910-3760					D	1322	1428
					D/E	1427	1473
\p {Calc}{Calc} v-Setup String vary w/printer					E	1472	1578
/ppos{esc}\027\038\107\048\083~ <-as HP ThinkJet					E/F	1577	1623
bra1.a1~bca1.a20~qrb2.n20~agq{Quit} uit} now!					F	1622	9999

Turning Factors:	N(sb)	S(nb)	E(wb)	W(eb)		-Rights-	-RTOR-	-%RTOR
Right Turns	1.0	1.0	1.0	1.0	N,sb	107	107	100%
Through Cars	1.0	1.0	1.0	1.0	S,nb	227	227	100%
Left Turns	1.0	1.0	1.0	1.0	E,wb	105	105	100%
					W,eb	85	85	100%

{file=CLVFL13g.WK1} | From NORTH (Southbound) |<- Name of N-S Approach
Subdivision Case: | R Right Thru Left | Fenton St
Silver Spring Library | ^ 153 403 27 =VPH |<- If Split Phase:N-S!!
Traffic Condition: | R 0 1 1 #Lanes | Use "N","Y": n
Total | ONLY | |LV(N): | Peak Hour Period:
Date: Count | for r <- V -> 687 | AM
RTOR 3

From WEST (Eastbound) 2 <={WB receiving lanes} ^ From EAST (Westbound)

	VPH	#Lanes								#Lanes	VPH	
Left	187	1	--^	SEB	CLV	(N-S)=	687	NB	^--	1	60	Right
Thru	151	2	-->	||	---	---	---		<--	1	599	Thru
Right	92	0	--v	V	SU	M CLV=	1473 ok		v--	1	250	Left
R	CLV(W)=	379		3		LOS= E		EB==>	1	CLV(E)=	786	

C LV(S): (ok-under 1,525)

Name of E-W Approach h | 427 <- ^ -> |If free flow Rt->Vol=0
Wayne Ave | | | | |If # lanes=0, then:
If Split Phase:E-W!! | # Lanes= 1 1 1 | R ights use Thru Lane
Use "N","Y": n | VPH= 131 427 92 | L efts use Thru Lane
Date: 20-Jul Jul-09 | Left Thru Right R |MUST hit CALC-F9 >IBM
By: | From SOUTH (Northbound) |To Print Use: Alt "P"

C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g

Created by Ed Axler Pg=2
Created on: 9/14/87 | Lane Utilization Factors: | LOS: CLV># <CLV
Updated 6/22/92 | A pproach h Turning Movement |

	No .Lanes	Left	Thru	Rght
	1 Lane	1.00	1.00	1.00
	2 Lanes	0.53	0.53	0.53
	3 Lanes	0.37	0.37	0.37
	4 Lanes	0.29	0.29	0.29
	5 Lanes	0.25	0.25	0.25

LOS:	CLV>#	<CLV
A	0	978
A/B	977	1023
B	1022	1128
B/C	1127	1173
C	1172	1278
C/D	1277	1323
D	1322	1428
D/E	1427	1473
E	1472	1578
t E/F	1577	1623
F	1622	9999

If any questions:
Call Ed Axler
at 1-301-495-4525
8787 Georgia Ave
Silver Spring, MD 20910-3760

\p {Calc}{Calc} v-Setup String vary w/printer
/ppos{esc}\027\038\107\048\083~ <-as HP ThinkJet
bra1.a1~bca1.a20~qrb2.n20~agq{Quit} uit} now!

Turning Factors:	N(sb)	S(nb)	E(wb)	W(eb)
Right Turns	1.0	1.0	1.0	1.0
Through Cars	1.0	1.0	1.0	1.0
Left Turns	1.0	1.0	1.0	1.0

	-Rights-	-RTOR-	-%RTOF
N,sb	153	153	100%
S,nb	92	92	100%
E,wb	60	60	100%
W,eb	92	92	100%

C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g

Created by Ed Axler Does Consider Split Phasing Pg=3
Created on: 9/14/87 Does Right Turn Checks, too!!
Updated 1/12/89 With Streamline Format !
Updated 2/24/89 If #Lns=5,Use Factor=.25
Updated 8/18/89 Improve Alt "P" Macro
Updated 8/30/89 Vary Turning Factors
Updated 9/25/89-10 8/9 Vary Lane use Factors
Updated 1/31/90-11a 8/9 Vary LOS for CLV Value
Updated 2/14/90-11b 9 For MDSHA,0.6=2 Lft Lanes
Updated 2/20/90-11c 9b Fix CLV-Split Calc, ?#22
Updated 2/22/90-11d 11a Add "YES" to use Split
Updated 5/17/90-11d 11a Add "MUST hit CALC"
Updated 9/26/90-11e 11a Fix Doc.of Equations
Update 11/27/90-11f 11b Thru can have 0 Lanes!!
Updated 5/31/91-12 11c Check # Receiving Lanes

LOS:	Pointer er <--
A	0
A/B	0
B	0
B/C	0
C	0
C/D	0
D	0
D/E	0
E	9 <--
E/F	9
F	9

```
{file=CLVFL13g.WK1}        } |  From NORTH (Southbound)          |<-  Name of N-S Approach
 Subdivision Case:           |  R   Right    Thru    Left         |    Fenton St
Silver Spring Library        |  ^     287     392      84 =VPH    |<-  If Split Phase:N-S!!
 Traffic Condition:          |  R       0       1       1 #Lanes  |     Use "N","Y":      n
Total                        |  ONLY |          |       |:LV(N):  | P  eak Hour Period:
Date:              Count     |  for r <-         V      ->   791  |    PM
_____ _________ _______ __|  RTOR                           3 |___ ______ _____ _____
From WEST (Eastbound)          2 <=[WB receiving lanes]      Λ    From EAST (Westbound)
       VPH       #Lanes             CLV  (N-S)=     791       ||        #Lanes   VPH   R
  Left        180       1  --^   SEB CLV  (E-W)=     632      NB^--          1    113 Right
  Thru        554       2  -->   || | ---  ---------- ---------     <--           1    385 Thru
  Right       134       0  --v   V /  SU   M CLV=   1423  ok     v--           1    267 Left
R        CLV(W)=     632          3          LOS=  D       | EB===>    1  CLV(E)=    565
_____ _________ _______ __     C   LV(S):   (ok-under 1,525)          ___ ______ _____ _____
Name of E-W Approach        h |         509        <-        ^    ->        |If  free flow Rt->Vol=0
Wayne Ave                     |                    |         |       |      |If  # lanes=0, then:
If Split Phase:E-W!!          |   #  Lanes=      1        1       1   | R  ights use Thru Lane
Use "N","Y":        n         |      VPH=      112      509     227   | L  efts use Thru Lane
Date:        20-Jul     Jul-09 |                 Left     Thru   Right R |MUST hit CALC-F9 >IBM
 By:                          |  From SOUTH (Northbound)              |To Print Use: Alt "P"
C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g
 Created by Ed Axler                                                                    Pg=2
 Created on:        9/14/87  |   Lane Utilization Factors:              |     LOS:    CLV>#  <CLV
 Updated 6/22/92             |   A  pproach h Turning Movement          |   ----------- -------- --------
                             |   No .Lanes    Left      Thru    Rght    |       A         0     978
                             |      1 Lane    1.00      1.00    1.00    |      A/B      977    1023
If any questions:            |      2 Lanes   0.53      0.53    0.53    |       B      1022    1128
 Call Ed Axler               |      3 Lanes   0.37      0.37    0.37    |      B/C     1127    1173
 at 1-301-495-4525           |      4 Lanes   0.29      0.29    0.29    |       C      1172    1278
 8787 Georgia Ave            |      5 Lanes   0.25      0.25    0.25    |      C/D     1277    1323
 Silver Spring, MD 20910-3760                                           |       D      1322    1428
-------- ----------- --------- --- -- --------- --------- --------- -------- -- --|      D/E     1427    1473
\p      {Calc}{Calc}            v-Setup String vary w/printer           |       E      1472    1578
        /ppos{esc}\027\038\107\048\083~                 <-as HP ThinkJet    t E/F      1577    1623
        bra1.a1~bca1.a20~qrb2.n20~agq{Quit}           uit}    now!      |       F      1622    9999
-------- ----------- --------- --- -- --------- --------- --------- -------- ,- --   -Rights-   -RTOR- -%RTOF
```

{file=CLVFL13g.WK1} | From NORTH (Southbound) |<- Name of N-S Approach
Subdivision Case: | R Right Thru Left | Fenton St
Silver Spring Library | ^ 153 403 27 =VPH |<- If Split Phase:N-S!!
Traffic Condition: | R 0 1 1 #Lanes | Use "N","Y": n
Total | Of LY | | |;LV(N): | P eak Hour Period:
Date: Count | for r <- V -> 687 | AM
RTOR 3

From WEST (Eastbound) 2 <=[WB receiving lanes] ^ From EAST (Westbound)

VPH	#Lanes		CLV (N-S)= 687		#Lanes	VPH	R
Left	187	0 –^	SI B CLV (E-W)= 786	NE ^–	1	60	Right
Thru	151	2 –>	|| | —	<–	1	599	Thru
Right	92	0 –v	V / SU M CLV= 1473 ok	v–	1	250	Left
R CLV(W)=	478		3 LOS= E | EB== =>	1	CLV(E)=	786	

C LV(S): (ok-under 1,525)

Name of E-W Approach h | 427 <- ^ -> |If free flow Rt->Vol=0
Wayne Ave | | | | |If # lanes=0, then:
If Split Phase:E-W!! | # Lanes= 1 1 1 | R ights use Thru Lane
Use "N","Y": n | VPH= 131 427 92 | L efts use Thru Lane
Date: 31-Aug Aug-09 | Left Thru Right R |MUST hit CALC-F9 >IBM
By: | From SOUTH (Northbound) |To Print Use: Alt "P"

C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g

Created by Ed Axler Pg=2
Created on: 9/14/87 | Lane Utilization Factors: | LOS: CLV># <CLV
Updated 6/22/92 | A pproach h Turning Movement |

	Nc .Lanes	Left	Thru	Rght
	1 Lane	1.00	1.00	1.00
	2 Lanes	0.53	0.53	0.53
	3 Lanes	0.37	0.37	0.37
	4 Lanes	0.29	0.29	0.29
	5 Lanes	0.25	0.25	0.25

LOS:	CLV>#	<CLV
A	0	978
A/B	977	1023
B	1022	1128
B/C	1127	1173
C	1172	1278
C/D	1277	1323
D	1322	1428
D/E	1427	1473
E	1472	1578
t E/F	1577	1623
F	1622	9999

If any questions:
Call Ed Axler
at 1-301-495-4525
8787 Georgia Ave
Silver Spring, MD 20910-3760

\p {Calc}{Calc} v-Setup String vary w/printer
/ppos{esc}\027\038\107\048\083~ <-as HP ThinkJet
bra1.a1~bca1.a20~qrb2.n20~agq{Quit} uit} now!

w/o LT lane

{file=CLVFL13g.WK1}

Subdivision Case:
Silver Spring Library
Traffic Condition:
Total
Date: Count

From NORTH (Southbound)

R	Right	Thru	Left	
^	287	392	84	=VPH
R	0	1	1	#Lanes
Or LY				:LV(N):
for r <-		V	->	791
RTOR				3

<-- Name of N-S Approach
Fenton St
<-- If Split Phase:N-S!!
Use "N","Y": n
Peak Hour Period:
PM

From WEST (Eastbound)

	VPH	#Lanes	
Left	180	0	–^
Thru	554	2	–>
Right	134	0	–v
R	CLV(W)=	727	

2 <=[WB receiving lanes]

SI B CLV (N-S)= 791
(E-W)= 727
M CLV= 1518 ok
LOS= E
C LV(S): (ok-under 1,525)

From EAST (Westbound)

	#Lanes	VPH	R
NE ^--	1	113	Right
<--	1	385	Thru
v--	1	267	Left
EB== =>	1	CLV(E)=	565

Name of E-W Approach
Wayne Ave
If Split Phase:E-W!!
Use "N","Y": n
Date: 31-Aug Aug-09
By:

	509	<- ^	->
# Lanes=	1	1	1
VPH=	112	509	227
	Left	Thru	Right

From SOUTH (Northbound)

If free flow Rt->Vol=0
If # lanes=0, then:
Rights use Thru Lane
Lefts use Thru Lane
MUST hit CALC-F9 >IBM
To Print Use: Alt "P"

C:/L/CLVFL13g.WK1 =Critical Lane Volume-FuLl intersection, version #13g
Created by Ed Axler
Created on: 9/14/87
Updated 6/22/92

If any questions:
Call Ed Axler
at 1-301-495-4525
8787 Georgia Ave
Silver Spring, MD 20910-3760

Lane Utilization Factors:

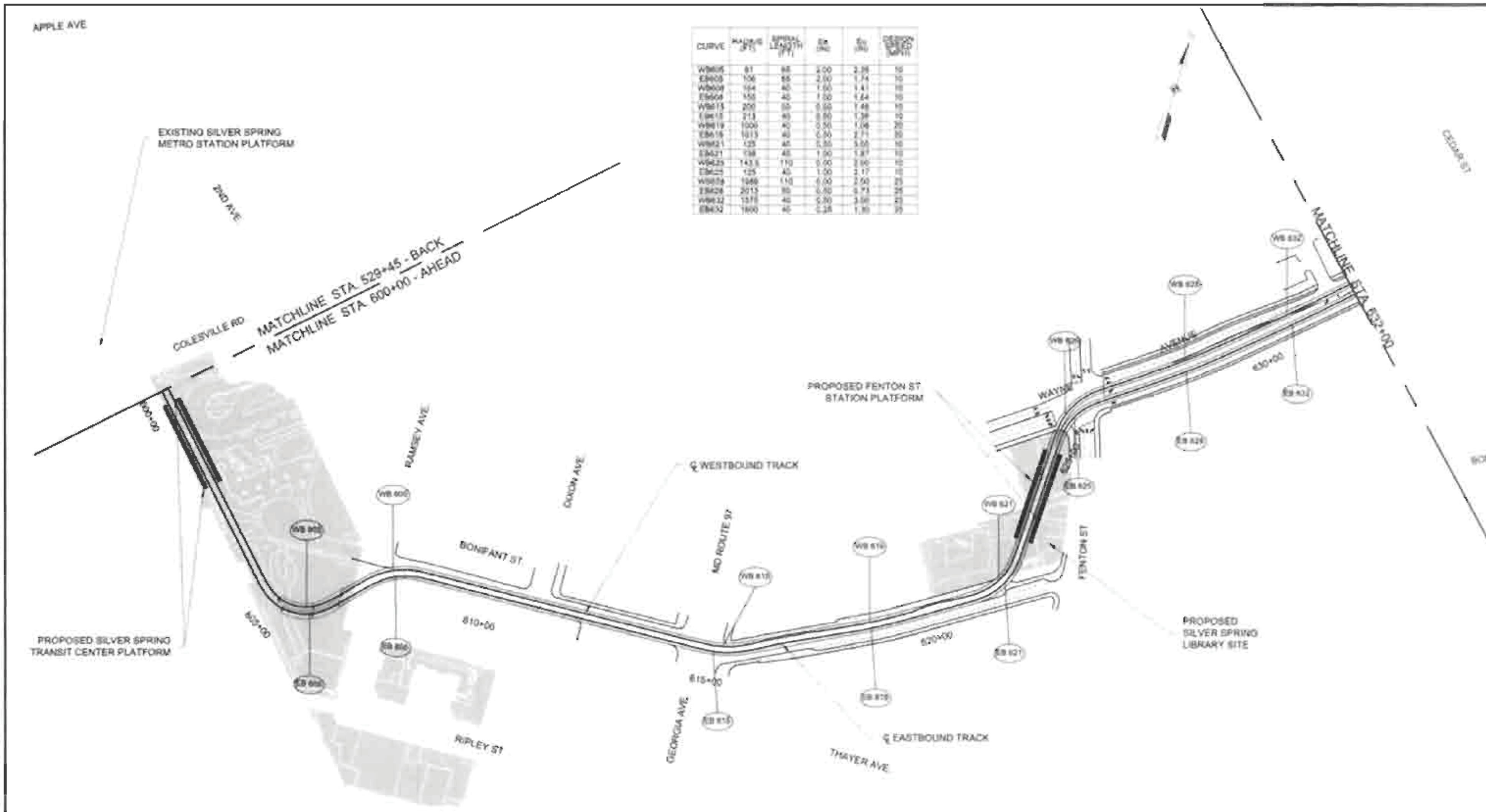
Approach h Turning Movement			
No .Lanes	Left	Thru	Rght
1 Lane	1.00	1.00	1.00
2 Lanes	0.53	0.53	0.53
3 Lanes	0.37	0.37	0.37
4 Lanes	0.29	0.29	0.29
5 Lanes	0.25	0.25	0.25

LOS:	CLV>#	Pg=2 <CLV
A	0	978
A/B	977	1023
B	1022	1128
B/C	1127	1173
C	1172	1278
C/D	1277	1323
D	1322	1428
D/E	1427	1473
E	1472	1578
t E/F	1577	1623
F	1622	9999

\p {Calc}{Calc} v-Setup String vary w/printer
/ppos{esc}\027\038\107\048\083~ <-as HP ThinkJet
bra1.a1~bca1.a20~qrb2.n20~agq{Quit} uit} now!

w/o LT lane

Wayne Ave
Image U.S. Geological Survey
© 2009 Twin Atlas
Streaming 100%
Google
Eye alt 1054 ft
Pointer 38°59'43.40" N 77°01'27.98" W elev 340 ft



CURVE	RADIUS (FT)	SPIRAL LENGTH (FT)	Ea (IN)	Eu (IN)	DESIGN SPEED (MPH)
WB605	81	65	2.00	2.26	10
EB605	106	55	2.00	1.74	10
WB609	164	40	1.50	1.41	10
EB609	155	40	1.50	1.64	10
WB615	200	50	0.50	1.48	10
EB615	213	40	0.50	1.38	10
WB619	1000	40	0.50	1.06	20
EB619	1013	40	0.50	2.71	20
WB621	125	40	0.50	3.05	10
EB621	138	40	1.00	1.87	10
WB625	143.5	110	0.00	2.00	10
EB625	125	40	1.00	2.17	10
WB629	1048	110	0.00	2.50	25
EB629	2013	50	0.50	0.73	25
WB632	1575	40	0.50	3.00	25
EB632	1600	40	0.25	1.30	25

DRAFT WORK-IN-PROGRESS

The Purple Line Transit Study information shown shall be used for general planning/information only. The locations of the proposed transit facilities and/or proposed roadway reconstruction/relocation are approximate and subject to change during subsequent stages of project development.

MARYLAND DEPARTMENT OF TRANSPORTATION

MTA Maryland

PB RK&K

Purple Line

SCALE: 1"=200'

PURPLE LINE

LOCALLY PREFERRED ALTERNATIVE - PLAN
STA. LPA600+00 TO STA. LPA 632+00

DATE: JULY 2008

SCALE: AS SHOWN

CONTRACT NO.

DRAWING NO. LPA-13

SHEET NO. 15 of 75

APPENDIX B

PEDESTRIAN EVALUATION

STSLTD STSLTD STSLTD STSLTD STSLTD STS STSLTD STSLTD STSLTD S STSLTD STSLTD STSLTD STSLTD

PEDESTRIAN COUNT - SUMMARY

Intersection of: Fenton St — Location: Montgomery Co
and: Wayne Ave — Date: 4/16/09 — Day: Thursday
Counted by: RW & EZ — Weather: Clear
Entered By: CPC

	NORTH LEG		EAST LEG		SOUTH LEG		WEST LEG		
TIME	EB	WB	NB	SB	EB	WB	NB	SB	TOTAL
AM									
06:30-45	0	1	1	0	0	3	0	1	6
45-00	4	6	2	0	0	9	3	2	26
07:00-15	3	5	4	3	2	15	1	2	35
15-30	2	4	3	4	1	8	3	0	25
30-45	2	5	5	3	2	11	5	8	44
45-00	3	9	8	3	1	8	1	3	36
08:00-15	9	5	6	8	2	5	4	1	41
15-30	6	4	2	5	0	11	2	4	35
30-45	8	7	0	0	0	6	1	6	28
45-00	5	12	5	6	1	6	1	8	44
09:00-15	7	13	1	4	0	15	3	2	45
15-30	6	12	5	1	1	10	1	8	44
AM 3 HOUR TOTALS	55	87	42	38	10	107	25	45	409
1 HOUR TOTALS									
630-730	9	16	10	7	3	35	7	5	92
645-745	11	23	14	10	5	43	12	12	130
07-08	10	26	20	13	6	42	10	13	140
715-815	16	27	22	18	6	32	13	12	146
730-830	20	27	21	20	5	35	12	16	156
745-845	26	26	16	17	3	30	8	14	140
08-09	28	29	13	20	3	28	8	19	148
815-915	26	36	8	16	1	38	7	20	152
830-930	26	44	11	11	2	37	6	24	161
PEAK HOUR									
830-930	26	44	11	11	2	37	6	24	161
PM									
04:00-15	17	9	8	6	7	3	4	16	72
15-30	7	8	6	11	3	5	8	20	68
30-45	10	16	9	5	2	3	5	18	69
45-00	11	6	12	2	3	5	10	10	59
05:00-15	22	16	8	17	3	2	11	20	99
15-30	10	15	7	5	2	10	12	22	83
30-45	14	9	6	9	7	14	1	30	90
45-00	16	15	14	5	3	7	7	19	86
06:00-15	21	22	14	5	6	7	18	23	116
15-30	13	15	16	15	2	3	10	25	99
30-45	16	14	17	16	6	9	14	21	113
45-00	14	12	10	11	10	6	14	8	85
PM 3 HOUR TOTALS	171	157	127	107	54	74	115	234	1039
1 HOUR TOTALS									
04-05	45	39	35	24	15	16	28	66	268
415-515	50	46	35	35	11	15	35	68	295
430-530	53	53	36	29	10	20	39	70	310
445-545	57	46	33	33	15	31	34	82	331
05-06	62	55	35	36	15	33	31	91	358
515-615	61	61	41	24	18	38	38	94	375
530-630	64	61	50	34	18	31	36	97	391
545-645	66	66	61	41	17	26	49	88	414
06-07	64	63	57	47	24	25	56	77	413
PEAK HOUR									
545-645	66	66	61	41	17	26	49	88	414

Street Traffic Studies, Ltd.

400 N. Cram Highway
Glen Burnie, Maryland 21061
(410) 590-5500 FAX (410) 590-6637

JOB Silver Spring Library

SHEET NO. _____ OF _____

CALCULATED BY _____ DATE 5746

CHECKED BY _____ DATE _____

SCALE _____

Pedestrian Trips

	In	Out	
3-4	64	46	110
3:15-4:15	69	60	129
3:30-4:30	68	60	128 ✓
3:45-4:45	56	54	110
4-5	40	55	95
4:15-5:15	31	46	77
4:30-5:30	33	46	79
4:45-5:45	30	57	87
5-6	37	56	93
5:15-6:15	42	46	88
5:30-6:30	41	39	80
5:45-6:45	46	26	72
6-7	39	19	58

Street Traffic Studies, Ltd.

400 N. Crain Highway
Glen Burnie, Maryland 21061
(410) 590-5500 FAX (410) 590-6637

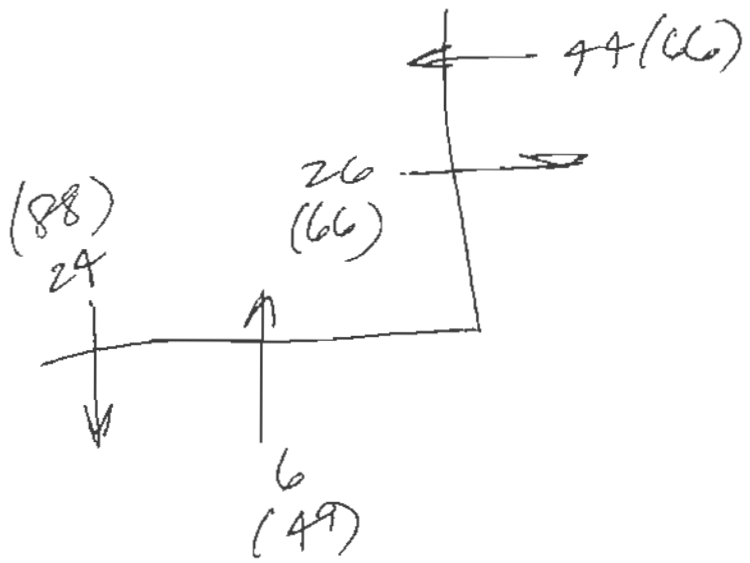
JOB _____

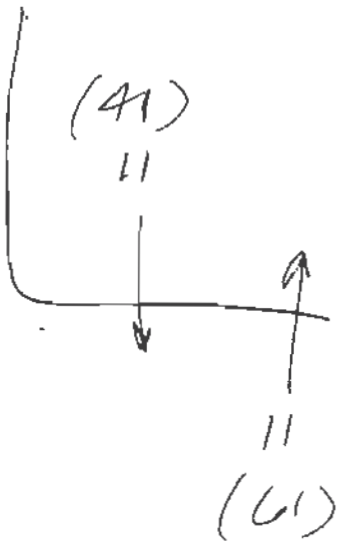
SHEET NO. _____ OF _____

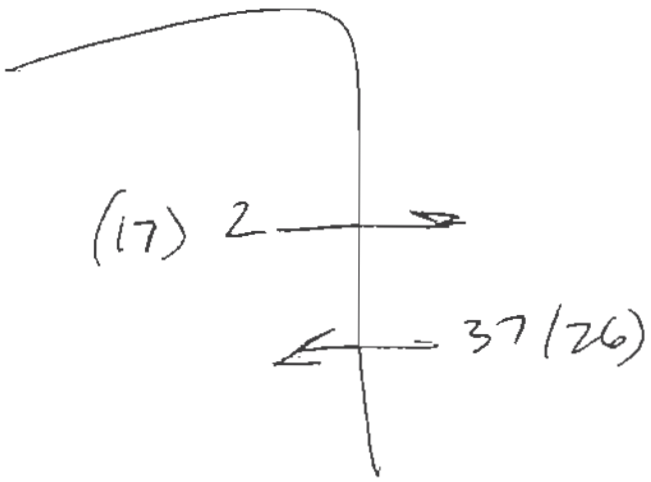
CALCULATED BY _____ DATE _____

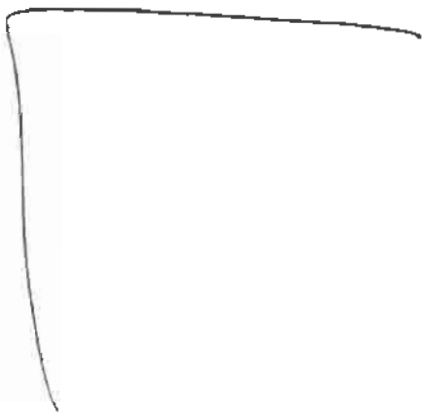
CHECKED BY _____ DATE _____

SCALE _____









Existing Site	46	26	72
Future	69	39	108

Existing Peds

$8^{30}-9^{30}$

$5^{45}-6^{45}$

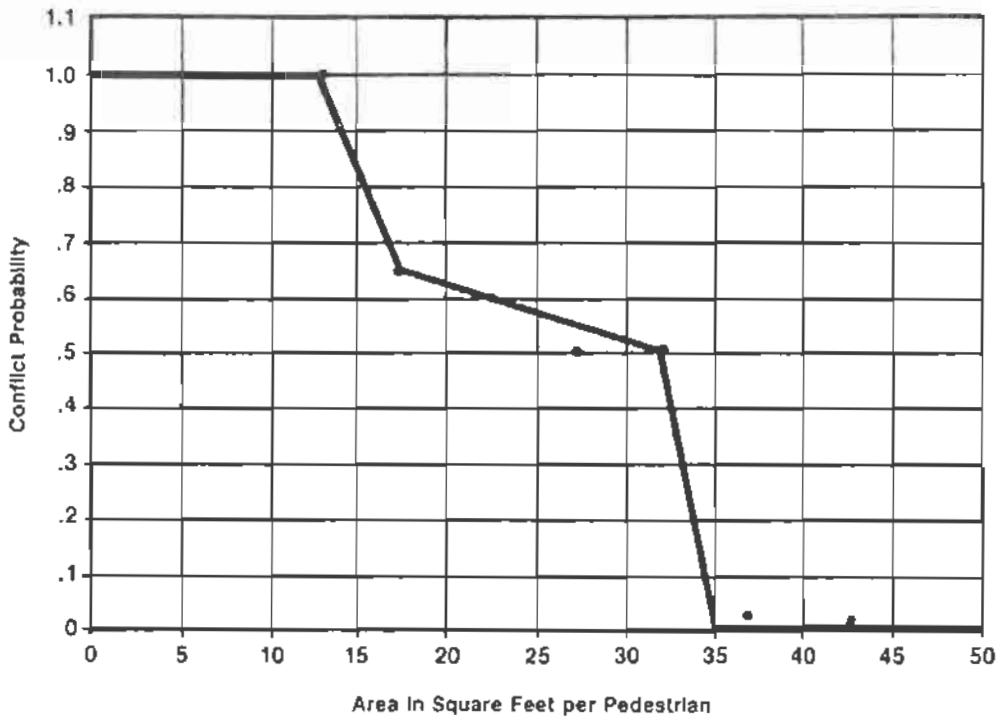


Figure 13-7. Cross-flow traffic—probability of conflict. (Source: Ref. *3*)

TABLE 13-3. PEDESTRIAN LEVEL OF SERVICE ON WALKWAYS*

LEVEL OF SERVICE	SPACE (SQ FT/PED)	EXPECTED FLOWS AND SPEEDS		
		AVE. SPEED, S (FT/MIN)	FLOW RATE, v (PED/MIN/FT)	VOL/CAP RATIO, v/c
A	≥ 130	≥ 260	≤ 2	≤ 0.08
B	≥ 40	≥ 250	≤ 7	≤ 0.28
C	≥ 24	≥ 240	≤ 10	≤ 0.40
D	≥ 15	≥ 225	≤ 15	≤ 0.60
E	≥ 6	≥ 150	≤ 25	≤ 1.00
F	< 6	< 150	—Variable—	

* Average conditions for 15 min.

directly behind or alongside each other. These same observations suggest that up to 100 sq ft/ped are required before completely free movement occurs without conflicts, and that at 130 sq ft/ped, individual pedestrians are no longer influenced by others (*5*). Bunching or "platooning" does not completely disappear until space is about 500 sq ft/ped or higher.

Walkway Level-of-Service Criteria

Table 13-3 shows the criteria for pedestrian level of service. The primary measure of effectiveness used in defining pedestrian level of service is *space*, the inverse of density. Mean speed and flow rate are shown as supplementary criteria. *Capacity* is taken to be 25 ped/min/ft, a representative value from Figures 13-2 and 13-3.

Graphic illustrations and descriptions of walkway levels of service are shown in Figure 13-8.

It should be noted that the pedestrian LOS, according to the criteria of Table 13-3, is quite good in most areas, as the high pedestrian flows required for the poorer levels generally occur only in and around major activity centers. In most areas, the design of walkways is based on the minimum widths required for voluntary pedestrian groups to pass each other and similar factors, rather than on the flow rate.

The LOS criteria apply to pedestrian flow and the space provided for that flow. Pedestrian facilities may also include extensive space intended to enhance the general environment that is not used or intended to handle basic pedestrian movements. When analyzing pedestrian flow rates per unit width of walkway, such space *should not be included*. Thus, pedestrian space intended to provide for window shopping, browsing, or

LEVEL OF SERVICE A

Pedestrian Space: ≥ 130 sq ft/ped Flow Rate: ≤ 2 ped/min/ft

At walkway LOS A, pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.

LEVEL OF SERVICE B

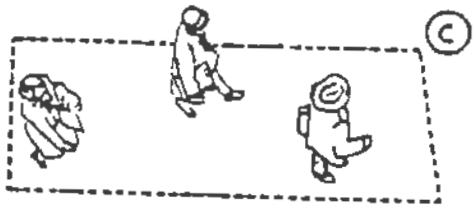
Pedestrian Space: ≥ 40 sq ft/ped Flow Rate: ≤ 7 ped/min/ft

At LOS B, sufficient area is provided to allow pedestrians to freely select walking speeds, to bypass other pedestrians, and to avoid crossing conflicts with others. At this level, pedestrians begin to be aware of other pedestrians, and to respond to their presence in the selection of walking path.

LEVEL OF SERVICE C

Pedestrian Space: ≥ 24 sq ft/ped Flow Rate: ≤ 10 ped/min/ft

At LOS C, sufficient space is available to select normal walking speeds, and to bypass other pedestrians in primarily unidirectional streams. Where reverse-direction or crossing movements exist, minor conflicts will occur, and speeds and volume will be somewhat lower.



LEVEL OF SERVICE D

Pedestrian Space: ≥ 15 sq ft/ped Flow Rate: ≤ 15 ped/min/ft

At LOS D, freedom to select individual walking speed and to bypass other pedestrians is restricted. Where crossing or reverse-flow movements exist, the probability of conflict is high, and its avoidance requires frequent changes in speed and position. The LOS provides reasonably fluid flow; however, considerable friction and interaction between pedestrians is likely to occur.

LEVEL OF SERVICE E

Pedestrian Space: ≥ 6 sq ft/ped Flow Rate: ≤ 25 ped/min/ft

At LOS E, virtually all pedestrians would have their normal walking speed restricted, requiring frequent adjustment of gait. At the lower range of this LOS, forward movement is possible only by "shuffling." Insufficient space is provided for passing of slower pedestrians. Cross- or reverse-flow movements are possible only with extreme difficulties. Design volumes approach the limit of walkway capacity, with resulting stoppages and interruptions to flow.

LEVEL OF SERVICE F

Pedestrian Space: ≤ 6 sq ft/ped Flow Rate: variable

At LOS F, all walking speeds are severely restricted, and forward progress is made only by "shuffling." There is frequent, unavoidable contact with other pedestrians. Cross- and reverse-flow movements are virtually impossible. Flow is sporadic and unstable. Space is more characteristic of queued pedestrians than of moving pedestrian streams.

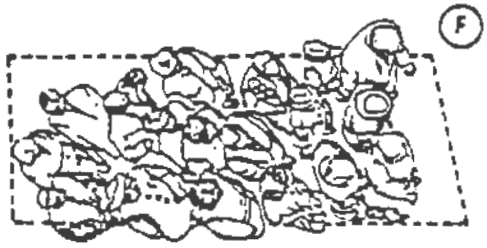
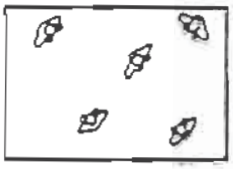


Figure 13-8. Illustration of walkway levels of service.

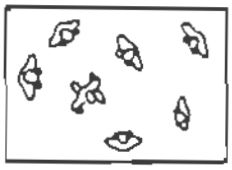
LEVEL OF SERVICE A

Average Pedestrian Area Occupancy: 13 sq ft/person or more
Average Inter-Person Spacing: 4 ft, or more
Description: Standing and free circulation through the queuing area is possible without disturbing others within the queue.



LEVEL OF SERVICE B

Average Pedestrian Area Occupancy: 10 to 13 sq ft/person
Average Inter-Person Spacing: 3.5 to 4.0 ft
Description: Standing and partially restricted circulation to avoid disturbing others within the queue is possible.

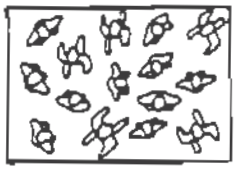


LEVEL OF SERVICE C

Average Pedestrian Area Occupancy: 7 to 10 sq ft/person
Average Inter-Person Spacing: 3.0 to 3.5 ft
Description: Standing and restricted circulation through the queuing area by disturbing others within the queue is possible; this density is within the range of personal comfort.

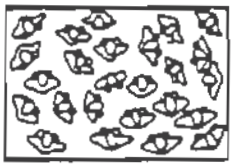
LEVEL OF SERVICE D

Average Pedestrian Area Occupancy: 3 to 7 sq ft/person
Average Inter-Person Spacing: 2 to 3 ft
Description: Standing without touching is possible; circulation is severely restricted within the queue and forward movement is only possible as a group; long term waiting at this density is discomforting.



LEVEL OF SERVICE E

Average Pedestrian Area Occupancy: 2 to 3 sq ft/person
Average Inter-Person Spacing: 2 ft or less
Description: Standing in physical contact with others is unavoidable; circulation within the queue is not possible; queuing at this density can only be sustained for a short period without serious discomfort.



LEVEL OF SERVICE F

Average Pedestrian Area Occupancy: 2 sq ft/person or less
Average Inter-Person Spacing: Close contact with persons
Description: Virtually all persons within the queue are standing in direct physical contact with those surrounding them; this density is extremely discomforting; no movement is possible within the queue; the potential for panic exists in large crowds at this density.

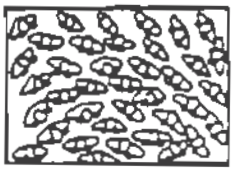


Figure 13-11. Levels of service for queuing areas. (Source: Ref. 3)

APPLICATION OF CRITERIA

The application of these LOS criteria is relatively straightforward for walkways and waiting areas, as indicated in the previous sections. Two remaining pedestrian facilities of interest, however, present more complicated situations: street corners and crosswalks. Each of these is briefly discussed in the following sections.

Street Corners

The street corner is a more complex problem than the midblock situation, involving intersecting sidewalk flows, pedestrians crossing the street, and others queued waiting for the signal to change. Because of the concentration of these activities, the corner is often the critical link in the pedestrian sidewalk network. An overloaded street corner can also affect vehicular

WALKWAY ANALYSIS WORKSHEET

Location: Wayne Ave @ Fenton St COUNTS

City, State: Silver Spring, MD Date: _____

Time: _____

Curb Line/Sidewalk Edge

PEAK 15-MIN FROM

_____ to _____

W_{B1} (curb) = _____ ft

W_{B2} (street furn.) = _____ ft

W_T = W_E (effective width) = _____ ft ← V_1 = _____

W_{B3} (window shop) = _____ ft → V_2 = _____ (ped/15 min)

W_{B4} (bldg protrusions) = _____ ft

W_{B5} (inside clearance = _____ ft

Wall Line/Sidewalk Edge

Pedestrian Volume

V_1 = 39 ped/15 min

V_2 = 22 ped/15 min

$V_p = V_1 + V_2$ = 61 ped/15 min

Walkway Width

W_T = 10 ft

$W_B = W_{B1} + W_{B2} + W_{B3} + W_{B4} + W_{B5}$ = _____ ft

$W_E = W_T - W_B$ = 10 ft

Average Walkway LOS

$v = V_p/15W_E$ = 61/150 = 0.41 ped/min/ft

Average LOS = C (Table 13-3)

Platoon Walkway LOS

$v_p = v + 4$ = _____ ped/min/ft

Platoon LOS = _____ (Table 13-3)

Figure 13-13. Worksheet for walkway analysis.

2. *Solution*—The total sidewalk width of 14 ft must be reduced to account for unused "buffer" areas at the curb and building line. From Figure 13-5, the curb buffer is 1.5 ft, and the building buffer (with window shopping assumed) is 3.0 ft. Thus, the effective walkway width is 14.0 − 1.5 − 3.0 = 9.5 ft, and it is this figure that is used to determine the average and platoon flow rates.

The average unit width flow rate is computed as:

$$v = V_{p15}/15W_E$$
$$v = 1{,}250/(15 \times 9.5) = 8.8 \text{ ped/min/ft}$$

The rate of flow within platoons may then be estimated as:

Purple Line

Daily Line Haul Boardings

Table 3-10 shows the total daily boardings for each of the alternatives. A boarding is when a person uses the transit service for all or part of trip. The boardings are shown for trips only using the Purple Line (over half the boardings), trips primarily on Metrorail and using the Purple Line for part of that trip, and trips primarily on MARC and using the Purple Line for part of that trip. High Investment LRT attracts the highest number of boardings followed by the other LRT alternatives and then the BRT alternatives.

The Medium Investment BRT variation via Jones Bridge Road, with the addition of the station at Woodmont Avenue and St. Elmo Street, would have total daily boardings of 50,000, while the other variation, Medium Investment BRT Extended to Medical Center, also including the station at Woodmont Avenue and St. Elmo Street, would have total daily boardings of 58,000. The Jones Bridge Road variation shows that the longer routing to the larger Bethesda travel market results in a loss of 2000 daily boardings relative to the original Medium Investment BRT alternative. The variation extending the service to Medical Center from Bethesda increases the daily boardings by 6,000.

Daily Station Boardings

Daily boardings, by station, for each of the Build alternatives are shown in Table 3-11. Not surprisingly given the shorter travel times, the highest number of riders is attracted by High Investment LRT, followed by Medium Investment LRT, and then Low Investment LRT and High Investment BRT, which attract approximately the same number of riders. All of the Build alternatives, except Low Investment BRT, have the same top three stations for daily boardings: the western terminus in Bethesda (north or south), the Silver Spring Transit Center, and the College Park Metro Station. For Low Investment BRT, the top three stations for daily boardings are the Silver Spring Transit Center, US 1 and College Park Metro Station.

Station Mode of Access

At all the stations along the Purple Line walk and feeder bus access would be the principal means of access and egress. At the Bethesda, Silver Spring, College Park, and New Carrollton Stations, transfer with Metrorail would be the major connection. With the exception of Bethesda, MARC connections are available at those stations. Major bus interfaces would occur at Bethesda, Silver Spring, Takoma/Langley, College Park, and New Carrollton stations. All these connections are with existing services. Some of the existing bus services would be modified to better integrate with the Purple Line service. Some existing bus services that duplicate the Purple Line service may be cut back. While parking facilities exist at the four Metrorail stations that connect with the Purple Line, no new park-and-ride facilities would be provided at any of the Purple Line stations. Kiss-and-ride could occur at some of stations, as occurs today at some bus stops, but additional kiss-and-ride facilities are being considered at Connecticut Avenue at the Georgetown Branch right-of-way, and at Lyttonsville.

University of Maryland Student Travel

The travel of University of Maryland employees, faculty, and staff to and from the campus is captured within the regional travel model forecasts and these trips are included in the

Table 3-10: Year 2030 Daily Purple Line Ridership

Transit Ridership (daily boardings)	TSM	Low Invest. BRT	Medium Invest. BRT	High Invest. BRT	Low Invest. LRT	Medium Invest. LRT	High Invest. LRT
Purple Line	12,700	22,200	29,300	33,800	32,500	33,900	36,100
Purple Line via Metrorail	2,100	16,700	21,100	23,700	25,300	27,200	30,500
Purple Line via MARC	–	1,100	1,400	1,400	1,500	1,500	1,500
Total	14,800	40,000	51,800	58,900	59,300	62,600	68,100

Table 3-11: Year 2030 Build Alternatives Daily Boardings

Segment	TSM	Low Inv. BRT	Med. Inv. BRT	High Inv BRT	Low Inv. LRT	Med. Inv. LRT	High Inv. LRT
Bethesda Metro, North Entrance	800	1,400	5,600	6,000	N/A	N/A	N/A
Medical Center Metro	N/A	3,900	N/A	N/A	N/A	N/A	N/A
Bethesda Metro, South Entrance	N/A	N/A	2,800	3,000	11,300	12,700	13,300
Montgomery Avenue	100	N/A	N/A	N/A	N/A	N/A	N/A
Connecticut Avenue	100	400	500	500	900	900	1000
Grubb Road	500	N/A	N/A	N/A	N/A	N/A	N/A
Lyttonsville	N/A	600	700	700	800	800	900
Woodside/16th Street	N/A	1,400	2,000	2,500	2,200	2,300	2,400
Silver Spring Transit Center	1,200	5,100	8,700	10,400	11,100	12,200	13,600
Fenton Street	600	600	600	N/A	700	700	N/A
Dale Drive	500	1,200	1,300	1,400	1,300	1,400	1,500
Manchester Place	600	700	800	1,100	800	900	1,200
Arliss Street	600	800	900	1,700	1,300	1,500	2,200
Gilbert Street	300	300	900	1,300	1,200	1,200	1,400
Takoma/Langley Transit Center	1300	1,400	2,300	3,200	2,700	3,000	3,700
Riggs Road	300	400	600	800	700	800	900
Adelphi Road	400	500	600	700	600	700	700
UM Campus Center	600	1,500	2,100	2,200	2,100	2,200	2,200
US 1 – East Campus	700	4,400	4,400	4,700	4,500	4,500	4,700
College Park Metro	2,400	8,000	8,600	9,100	8,600	8,600	8,900
River Road	500	1,500	1,500	1,500	1,500	1,500	1,500
Riverdale Park	600	1,400	1,500	1,600	1,600	1,500	1,600
Riverdale Road	500	500	500	700	600	500	700
Annapolis Road	500	900	1,100	1,200	1,000	1,000	1,200
New Carrollton Metro	1,700	3,100	3,800	4,500	3,800	3,700	4,500
Total Boardings	**14,800**	40,000	51,800	58,800	59,300	62,600	68,100

Mitigation of Adverse Traffic Effects

The six Build alternatives would result in adverse effects to traffic at up to four of the 64 key intersections during the peak hours of operation. The potential adverse effects of the Build alternatives could in many cases be mitigated by the addition or modification of turn lanes at intersections.

3.2.4. On-Street Parking Impacts

Impacts to parking on private property are discussed in Chapter 4. The TSM alternative would not require the removal of on-street parking. However, several of the Build alternatives would require peak-hour restrictions of on-street parking along certain roadway segments. Several of the Build alternatives would also require the complete removal of on-street parking along several segments.

Low Investment BRT

Low Investment BRT would require the restriction during the AM and PM peak periods of all on-street parking in both directions along Woodmont Avenue, between Old Georgetown Road and Wisconsin Avenue. There are currently peak-hour parking restrictions along this segment, but those restrictions would need to be expanded to accommodate Low Investment BRT.

A short section of on-street parking would also need to be restricted during peak travel periods along Jones Bridge Road near the intersection of Jones Mill Road. This segment would serve as a queue jump lane for eastbound buses.

On-street parking would also need to be restricted during peak travel periods on Wayne Avenue, between Cedar Street and Mansfield Road, to accommodate Low Investment BRT. There are currently peak-hour parking restrictions along this segment, but those restrictions would need to be expanded to accommodate Low Investment BRT.

Medium Investment BRT

On-street parking along the north curb line of Bonifant Street would need to be removed to accommodate Medium Investment BRT. Parking along the south curb could remain under Medium Investment BRT if Bonifant Street is converted to one-way usage.

On-street parking would need to be restricted during peak travel periods on Wayne Avenue, between Cedar Street and Mansfield Road to accommodate Medium Investment BRT. There are currently peak-hour parking restrictions along this segment, but those restrictions may need to be modified or expanded.

Additionally, on-street parking along both the north and south sides of East West Highway, between 61st Place and 64th Avenue would need to be removed to accommodate the two new dedicated transit curb lanes proposed for this segment.

High Investment BRT

On-street parking along Wayne Avenue between Cedar Street and Mansfield Road would need to be removed to accommodate High Investment BRT.

Additionally, on-street parking along both the north and south sides of East West Highway, between 61st Place and 64th Avenue would need to be, at a minimum, restricted during peak travel periods to accommodate the two new dedicated median transit lanes.

Low Investment LRT

On-street parking along the north curb line of Bonifant Street would need to be removed to accommodate Low Investment LRT. Parking along the south curb would also need to be removed to maintain Bonifant Street as a two-way street.

On-street parking would need to be restricted during peak travel periods on Wayne Avenue between Cedar Street and Mansfield Road to accommodate Low Investment LRT. There are currently peak-hour parking restrictions along this segment, but those restrictions would need to be expanded.

Additionally, on-street parking along both the north and south sides of East West Highway, between 61st Place and 64th Avenue would need to be, at a minimum, restricted during the peak travel periods to accommodate the two new dedicated median transit lanes.

Medium Investment LRT

On-street parking along the north curb line of Bonifant Street would need to be removed to accommodate Medium Investment LRT. Parking along the south curb could remain.

On-street parking would need to be restricted during peak travel periods on Wayne Avenue between Cedar Street and Mansfield Road to accommodate this alternative. There are currently peak-hour parking restrictions along this segment, but those restrictions would need to be expanded.

Additionally, on-street parking along both the north and south sides of East West Highway, between 61st Place and 64th Avenue would need to be, at a minimum, restricted during peak travel periods to accommodate the two new dedicated median transit lanes.

High Investment LRT

On-street parking along Wayne Avenue between Cedar Street and Mansfield Road would need to be removed to accommodate High Investment LRT.

Additionally, on-street parking along both the north and south sides of East West Highway between 61st Place and 64th Avenue would need to be, at a minimum, restricted during peak travel periods to accommodate the two new dedicated median transit lanes.

3.3. Pedestrian and Bicycle Access

Numerous pedestrian and bicycle facilities are located throughout the corridor. The Interim Georgetown Branch Trail along the Georgetown Branch right-of-way, which extends from Bethesda to Silver Spring, is a heavily used hiker-biker trail on an exclusive alignment from Bethesda to Lyttonsville. At Lyttonsville the trail turns and runs parallel to the CSX corridor on existing streets. All Build alternatives except Low Investment BRT would include construction of the Capital Crescent Trail extension east from its current terminus in Bethesda at Woodmont Avenue to the Silver Spring Transit Center. Low Investment BRT would include construction of the trail from Jones Mill Road to the Silver Spring Transit Center. The conceptual designs for this trail are described in Chapter 2.

The Build alternatives would accommodate plans for connection of the Capital Crescent Trail to the Metropolitan Branch Trail and the Green Trail at the Silver Spring Transit Center. The Metropolitan Branch Trail and the Green Trail are separate projects from the Purple Line and are not dependent on the Purple Line. The Green Trail, which will connect the Sligo Creek Trail with the Silver Spring Transit Center, will follow Wayne Avenue parallel to the Purple Line surface alternatives. The MTA has worked with the M-NCPPC to accommodate the trail, with minimal impacts to adjacent properties. County guidelines permit a combined sidewalk and trail eight feet wide outside of a central business district. The trail would be on the north side of Wayne Avenue, separated from the transitway and road by a five-foot landscaped buffer.

Capital Crescent Trail in the Georgetown Branch Right-of-Way

In accordance with SHA guidelines, bicycle lanes would be added to University Boulevard as part of its reconstruction under Medium and High Investment BRT and all three LRT Alternatives.

The corridor includes several areas with substantial existing pedestrian activity. Existing pedestrian volumes are in the moderate to high range in downtown Bethesda, downtown Silver Spring, Takoma Park/Langley Park, and the University of Maryland areas. Both BRT and LRT systems operate safely today in comparable environments.

Although the station locations are regarded as conceptual and will be more specifically located in the subsequent Preliminary Engineering phase, they have been placed at suitable locations with respect to walk and bus transfer access to the system, including existing and planned development, other transit services, especially the Metrorail stations, and the planned transit centers at Silver Spring and Takoma/Langley Park. Many of the projected users of the Purple Line would be existing transit users who already make up a portion of the pedestrian activity along the corridor. These existing transit users would simply be shifting from the existing bus service to the Purple Line and would not represent new pedestrians making use of the facilities in the station areas. Therefore, the net increase in pedestrians due to the Purple Line could be less than the total ridership projections would indicate. Some increased concentrations of pedestrian activity would be expected on the approaches to the proposed station locations. The magnitude of the changes in pedestrian volumes is a function of the specific station and projected levels of ridership at those locations. A qualitative analysis of pedestrian facilities along the alignment indicates that they are likely to be sufficient to accommodate an increase in pedestrian activity. There is a well-developed network of sidewalks and pedestrian pathways in the area, and pedestrian signals (including pedestrian-actuated signals) are already provided at the vast majority of signalized intersections crossed by the Purple Line. Additional measures to accommodate any potential increases in pedestrian volumes in and around the proposed station areas could include: the widening of existing crosswalks and sidewalks, the installation of pedestrian-actuated signals at those locations that lack them, the enhancement of roadside signing alerting motorists of areas of increased pedestrian activity. Additionally, it could be appropriate to install median fencing, landscaping, or other measures at the station locations to encourage pedestrians to use the marked crosswalks at the signalized intersections.

3.4. Deliveries

Generally, High Investment BRT and the three LRT Alternatives would operate in dedicated transit lanes constructed in the median, or in the case of mixed traffic operations, in the inside travel lane. In most areas, there would be at least two general purpose travel lanes in each direction; which is sufficient to provide access to properties adjacent to the roadway alignment.

In the few instances where the alternatives would limit general purpose traffic to a single travel lane, such as Wayne Avenue between Cedar Street and Sligo Creek Parkway under the High Investment alternatives, stopping would generally not be permitted. This configuration may make access to and from driveways more difficult, though vehicles could encroach on the trackway if necessary.

Low and Medium Investment BRT would generally operate in the curb lanes, in either mixed traffic or dedicated transit lanes. These curb lanes could be used by vehicles accessing adjacent properties.

3.5. Emergency Vehicles

Emergency vehicles can be affected by a transit project due to changes in traffic volumes or operations along the corridor. The Build alternatives are generally expected to maintain, or in some cases, slightly improve the projected traffic operations under the No Build condition. Minor signal modifications would be required at a number of locations throughout the corridor, but these modifications would not prevent the continuing use or implementation of emergency vehicle preemption at those signals. LRT tracks are constructed in roadways flush with the roadway surface so they can be crossed by other vehicles. Thus they would not impede or create a barrier for emergency vehicles.

The Build alternatives would result in the removal of a limited number of existing buses, which operate on routes that would duplicate service. Additionally, the Build alternatives would typically operate in dedicated transit lanes; the net effect would be to reduce the number of transit vehicles operating in the general purpose lanes. Overall, the Build alternatives are not projected to substantially affect emergency vehicles operating in the corridor.

For the Purple Line, there is one major medical facility located adjacent to the proposed alternatives. The National Naval Medical Center is located along Jones Bridge Road, adjacent to Low Investment BRT. However, the National Naval Medical Center is a United States Naval facility, intended for treatment of servicemen and women; this facility is not an emergency treatment center for area residents. Access to this facility would not be affected by the presence of BRT vehicles along Jones Bridge Road.

There is one fire station located adjacent to Annapolis Road and Low Investment BRT and LRT in the New Carrollton area. This fire station

Carl Starkey

From: Jeff Kuttesch [jkuttesch@rkk.com]
Sent: Friday, January 15, 2010 10:10 AM
To: Carl Starkey
Subject: Re: Silver Spring Library

Carl,

I checked with the folks doing the ridership forecasting over at PB, and they provided the following rule of thumb:

- Use about 25-30% of the daily number in each of the AM and PM peak periods, with about 12-15% of the daily number in the peak hour.

Please let me know if you have any additional questions.

Thanks,
Jeff

JEFFREY S. KUTTESCH, P.E., PTOE
Project Engineer - Traffic

RK&K
81 Mosher Street
Baltimore, MD 21217

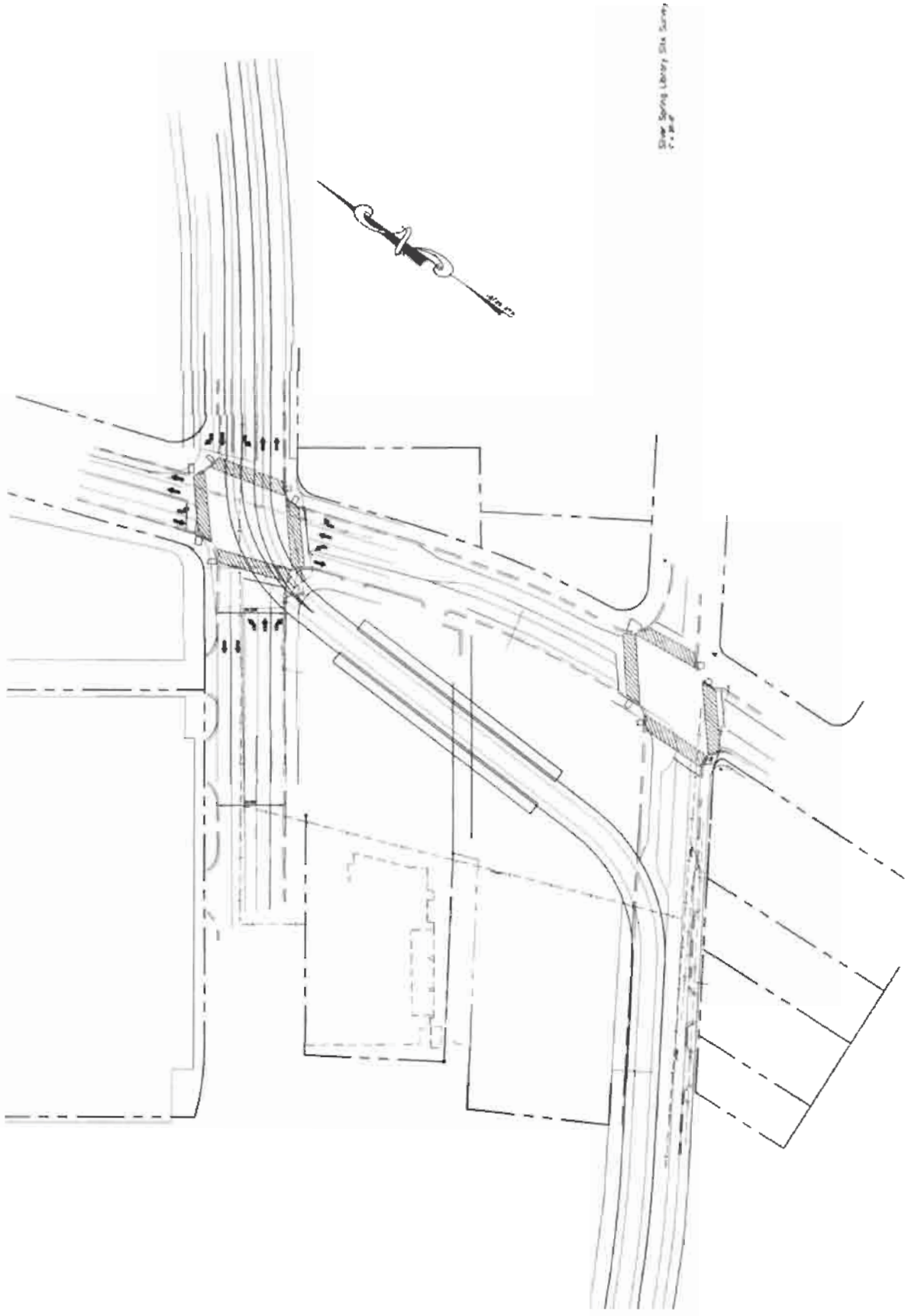
410.462.9186 D
410.728.2900 P
410.383.3270 F
www.rkk.com

---- Original Message -----
From: "Carl Starkey" <Cstarkey@streettrafficstudies.com>
To: "Jeff Kuttesch" <jkuttesch@rkk.com>
Sent: Thursday, January 14, 2010 1:22:03 PM GMT -05:00 US/Canada Eastern
Subject: RE: Silver Spring Library

Jeff,

I have been asked to define the pedestrian impacts of the Purple Line at the Fenton St station. My initial reaction is that they will be minimal, given that Fenton St is not an end of line station. Daily forecasts indicate 600 boardings a day for BRT and 700 per day for LRT. Is there a rule of thumb number for the peak hour percentage of ridership or has RK&K assumed a value? That is, do 5%, 10%, 20% of boardings occur during the peak hours? Any help would be greatly appreciated.

Carl F. Starkey, P.E.
Street Traffic Studies, Ltd.
400 Crain Highway, NW
Glen Burnie, MD 21061
410-590-5500 v
410-590-6637 f



PROPOSED SIGNS

22,24,26,29

NO TURN ON RED

R10-11A 24"X30"

27

LEFT TURN YIELD ON GREEN

R10-12 24"X 30"

30

ONLY

R3-5R 30"X36"

PROPOSED SIGNALS

12" 12" 12"

1,2,3,4,5, 6,7,8,9,12

10,11

13,14,15,16 17,18,19,20

ALL SIGNALS SHALL BE EQUIPPED WITH BACKPLATES.
ALL SIGNALS LENSES SHALL BE 12" GLASS.

A, B, C, D

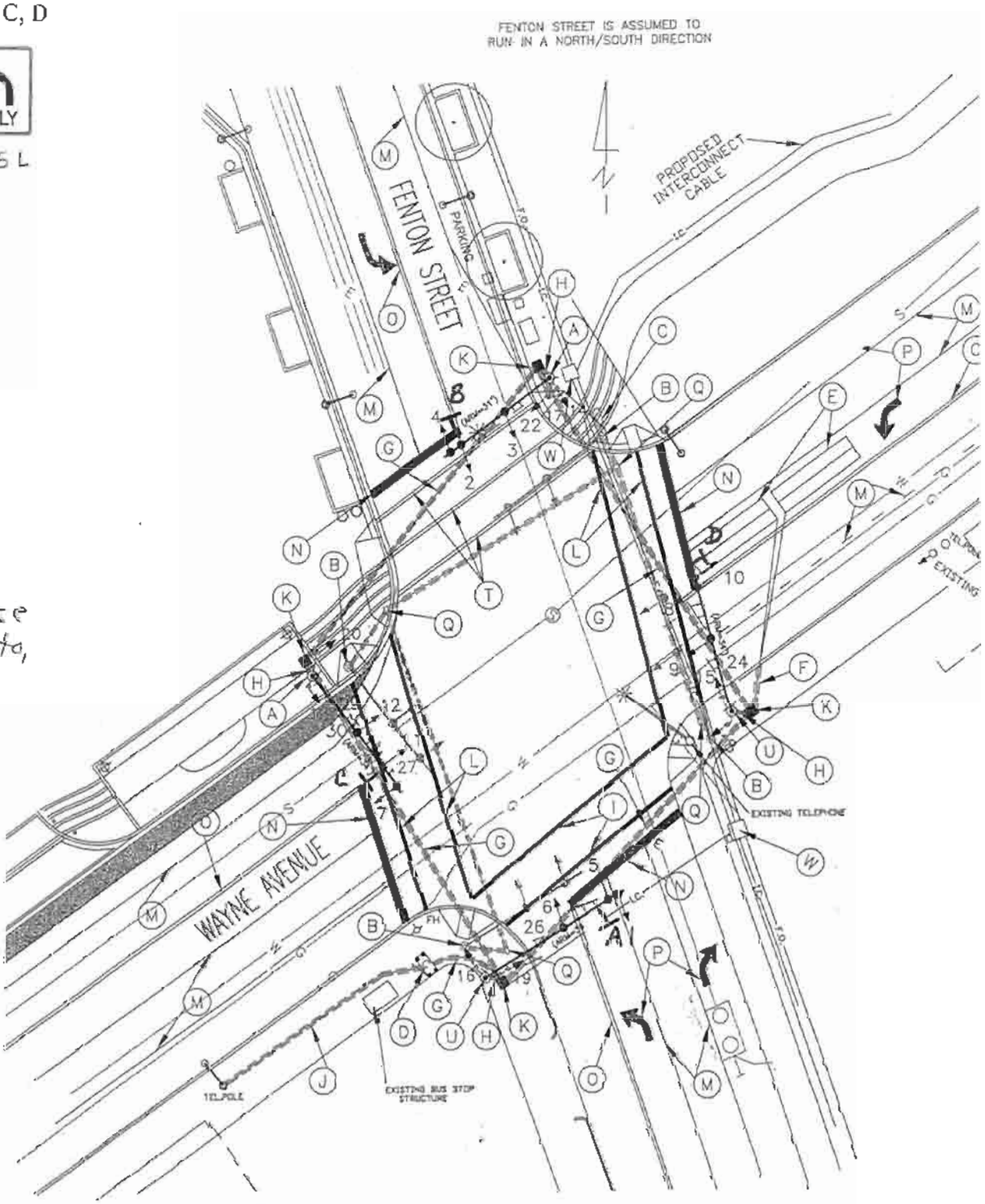
ONLY

R3-5L

N

54-E *

New Lane Use As per photo, 6/12/03 CR



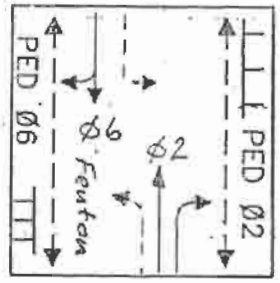
FENTON STREET RUNS IN A NORTH–SOUTH DIRECTION

SEQUENCE OF OPERATION SHEET
TRAFFIC OPERATIONS SECTION
DIVISION OF TRAFFIC ENGINEERING
MONTGOMERY COUNTY, MARYLAND

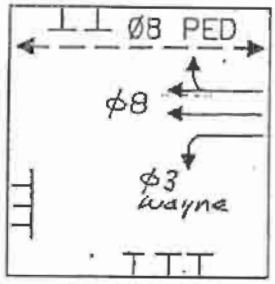
INTERSECTION: FENTON STREET AND WAYNE AVENUE. No. 54-E*

PHASING DIAGRAM

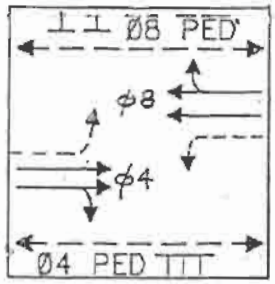
2+6



3+8



4+8



SIGNAL NO.	SIGNAL HEAD INDICATIONS 1-9,12	10,11	P13-20
TOTAL:	10	2	8
LEGEND: OPTICALLY LIMITED; R RED; Y YELLOW; G GREEN; ← ARROW; F FLASHING	R Y G 12"	R ←Y Y ←G G 12"	9"or 12" X Count+down Peds INSTALLED ON 10/15/02 +Audible Peds

SIGNAL NO.	SEQUENCE OF OPERATION INTERVAL 1	2	3	4	5	6	7	8	9	10	11	12	FLASH
1	G	G	Y	R	R	R	R	R	R	R	R	R	Y
2	G	G	Y	R	R	R	R	R	R	R	R	R	Y
3	G	G	Y	R	R	R	R	R	R	R	R	R	Y
4	G	G	Y	R	R	R	R	R	R	R	R	R	Y
5	G	G	Y	R	R	R	R	R	R	R	R	R	Y
6	G	G	Y	R	R	R	R	R	R	R	R	R	Y
7	R	R	R	R	R	R	R	G	G	G	Y	R	R
8	R	R	R	R	R	R	R	G	G	G	Y	R	R
9	R	R	R	R	R	R	R	G	G	G	Y	R	R
10	R	R	R	R	~~G~~ G	~~Y~~ G	G	G	G	G	Y	R	R
11	R	R	R	R	~~G~~ G	~~Y~~ G	G	G	G	G	Y	R	R
12	R	R	R	R	G	G	G	G	G	G	Y	R	R
13	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
14	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
15	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
16	W	DWF	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	
17	DW	DW	DW	DW	W	W	W	W	DWF	DW	DW	DW	
18	DW	DW	DW	DW	DW	DW	DW	W	DWF	DW	DW	DW	
19	DW	DW	DW	DW	DW	DW	DW	W	DWF	DW	DW	DW	
20	DW	DW	DW	DW	W	W	W	W	DWF	DW	DW	DW	
PHASE	Ø2 + 6			ALL RED	Ø3 + 8		ALL RED	Ø4 + 8				ALL RED	

1/9/2005 LED Retrofit for signal 1-12 R+G BALLS Plus R+G Arrows

E* for new Lane use after restriping As per photo on 4-12-03 ER to Ø ing changes.

SUBMITTED: C. Romaine 4/7/00 CHECKED: _____ APPROVED: B. Gonzales 4.10.00

IN SERVICE BY: JS DATE: 8.3.00 TIME: 1300

APPENDIX C

ACCIDENT DATA

Street Traffic Studies, Ltd.

400 N. Crain Highway
Glen Burnie, Maryland 21061
(410) 590-5500 FAX (410) 590-6637

JOB _____

SHEET NO. _____ OF _____

CALCULATED BY _____ DATE _____

CHECKED BY _____ DATE _____

SCALE _____

2003-
2007

4/24/05 FENTON @ WAYNE
Pedestrians (2)
struck by single vehicle
Raining EB THRU?

27 total accidents

WAYNE @ FENTON

29 total accidents

10/10/06 Pedestrian injured
single vehicle making
SB left

SHA

Montgomery County Road Inventory

Dir	Route	Road Name	Mile	Route	Intersecting Road Name	Municipality
E	CO668	Wayne Ave	0.00	MD384	Colesville Rd	
E	CO668	Wayne Ave	0.00	CO1300	Second Ave (Back)	
E	CO668	Wayne Ave	0.00		Start Of Inventory	
E	CO668	Wayne Ave	0.02		Wmata Bus Loop	
E	CO668	Wayne Ave	0.02		Wmata Bus Loop	
E	CO668	Wayne Ave	0.04	CO670	Ramsey Ave	
E	CO668	Wayne Ave	0.10	CO669	Dixon Ave	
E	CO668	Wayne Ave	0.13	CO2107	Alley	
E	CO668	Wayne Ave	0.14		Spur Fr Georgia Ave	
E	CO668	Wayne Ave	0.17	US29	Georgia Ave	
E	CO668	Wayne Ave	0.20	CO622	Pershing Dr	
E	CO668	Wayne Ave	0.21	CO2103	Alley	
E	CO668	Wayne Ave	0.23		Spur To Pershing Dr	
E	CO668	Wayne Ave	0.27		Wmata Bus Loop	
E	CO668	Wayne Ave	0.31	CO629	Fenton St	
E	CO668	Wayne Ave	0.50	CO623	Cedar St	
E	CO668	Wayne Ave	0.59	CO1319	Springvale Rd	
E	CO668	Wayne Ave	0.64	CO617	Cloverfield Rd	
E	CO668	Wayne Ave	0.67	CO624	Greenbrier Dr	
E	CO668	Wayne Ave	0.71	CO620	Dartmouth Ave	
E	CO668	Wayne Ave	0.80	CO7074	Dale Dr	
E	CO668	Wayne Ave	1.03	CO659	Mansfield Rd	
E	CO668	Wayne Ave	1.16		Struc #M0762 Sligo Creek	
E	CO668	Wayne Ave	1.19	GV7	Sligo Creek Pkwy	
E	CO668	Wayne Ave	1.19	CO621	E Wayne Ave (Ahead)	
E	CO668	Wayne Ave	1.19		End Of Inventory	

Division of Traffic Engineering and Operations

AIMS Accident Report Extract

Wayne Ave at Fenton Street (2003-2007)

Total Accidents: 29

Vehicle Occupants

Injured:	11
Killed:	0

Pedestrians

Injured:	1
Killed:	0

Harmful Events (Top 2)

Other Vehicle	24
Parked Vehicle	2

Accident Severity

Not injured	14
Possible Injury	6
Injured	2
Disabled	1
Fatal	0

Intersection Related

Non-intersection	13
Intersection	13
Intersection-related	2
Driveway-Access	1
Non-intersection	0
Intersection	0
Intersection-related	0
Driveway-Access	0
Other	0
Unknown	0

Contributing Circumstances (Top 2)

Failed to yield right-of-way	9
Failed to give full time/attention	6

Time Of Day

6:00 a.m. - 10:00 a.m.: 2	10:00 a.m. - 4:00 p.m.: 8	4:00 p.m. - 8:00 p.m.: 9	8:00 p.m. - 6:00 a.m.: 8

Weather

N/A	0
Clear / Cloudy	26
Foggy	0
Raining	3
Snow / Sleet	0
Severe winds	0
Other	0
Unknown	0

Road Surface

N/A	0
Wet	3
Dry	25
Snow	0
Ice	1
Mud	0
Other	0
Unknown	0

Illumination

N/A	0
Daylight	17
Dawn / Dusk	0
Dark / Lights on	12
Dark / No Lights	0
Other	0
Unknown	0

Collision Type

DATE: 10/21/2003 HOUR 5 PM REPORT NUMBER: 9729596

Location
Route: CO 668 Mile: 0.33 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 7 Sideswipe with Traffic
Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Transit Bus
Movement: Changing Lanes
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Ice Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to keep right of center
2) What is Code 00?

DATE: 12/24/2003 HOUR 7 PM REPORT NUMBER: 9753306

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: W2 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 3 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 3 Rear-End
Harmful Events: 1) Other Vehicle 2) Unknown

Vehicle #1
Direction: West
Type: Automobile
Movement: Accelerating
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Transit Bus
Movement: Starting from Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 3/23/2004 HOUR 7 PM REPORT NUMBER: 9990852

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: U9 Intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 10
Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: West
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 8/6/2004 HOUR 5 PM REPORT NUMBER: 8072894

Location Route: CO 668 Mile: 0.29 County: 15 Municipality:
Name: WAYNE AVE Lane: E2 Non-intersection

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 1 Harmful Events: 1) Other Vehicle
Head-On 2) Unknown

Vehicle #1 Direction: West
Type: Single Truck 3 Axles
Movement: Starting from Traffic Lane
Drvr Cond: Apparently normal

Vehicle #2 Direction:: East
Type: Van
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes: 1) Failed to give full time/attention
2) What is Code 00?

DATE: 11/7/2004 HOUR 9 PM REPORT NUMBER: 121309

Location Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: S2 Intersection

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 7 Harmful Events: 1) Other Vehicle
Sideswipe with Traffic 2) Unknown

Vehicle #1 Direction: South
Type: Automobile
Movement: Changing Lanes
Drvr Cond: Apparently normal

Vehicle #2 Direction:: South
Type: Transit Bus
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes: 1) Improper lane change
2) What is Code 00?

DATE: 12/31/2004 HOUR 1 AM REPORT NUMBER: 68013

Location Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 1 Harmful Events: 1) Other Vehicle
Head-On 2) Unknown

Vehicle #1 Direction: West
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Had been drinking

Vehicle #2 Direction:: East
Type: Recreational Vehicle
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes: 1) Under influence of alcohol
2) What is Code 00?

DATE: 3/7/2005 HOUR 12 Noon REPORT NUMBER: 0510544406

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: W1 Intersection

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 02 Left Turn into Opposing Traffic Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: West
Type: Recreational Vehicle
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) Exceeding speed limit

DATE: 3/7/2005 HOUR 5 PM REPORT NUMBER: 0509751343

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E2 Intersection

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 04 Rear-End into Right Turning Vehicle Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Recreational Vehicle
Movement: Making Right Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Transit Bus
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes:
1) Improper turn
2) What is Code 00?

DATE: 6/13/2005 HOUR 9 PM REPORT NUMBER: 0510545109

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 02 Left Turn into Opposing Traffic Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: West
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Van
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 7/5/2005 HOUR 10 PM REPORT NUMBER: 0510686567

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 02 Left Turn into Opposing Traffic
Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: West
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 7/7/2005 HOUR 3 AM REPORT NUMBER: 0509720094

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: W1 Intersection

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 14
Harmful Events: 1) Other Vehicle 2) Fixed Object

Vehicle #1
Direction: West
Type: Automobile
Movement: Making Right Turn
Drvr Cond: Had been drinking

Vehicle #2
Direction:: North
Type: Automobile
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes:
1) Under influence of alcohol
2) What is Code 00?

DATE: 7/11/2005 HOUR 2 PM REPORT NUMBER: 0509728692

Location
Route: CO 668 Mile: 0.3 County: 15 Municipality:
Name: WAYNE AVE Lane: W1 Non-intersection

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 14
Harmful Events: 1) Other Vehicle 2) Unknown

Vehicle #1
Direction: West
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: South
Type: Pickup Truck
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 5/21/2006 HOUR 11 AM REPORT NUMBER: 10120909

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed. 0
Vehicles Involved: 1 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 17 Harmful Events: 1) Fixed Object
Single Vehicle 2) N/A

Vehicle #1
Direction: South
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: N/A
Type: N/A
Movement: N/A
Drvr Cond: N/A

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Too fast for conditions
2) What is Code 00?

DATE: 6/15/2006 HOUR 9 PM REPORT NUMBER: 10519230

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection

Severity
Possible Injury Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 2 Pedestrians Injured: 0

Events
Collision Type: 02 Harmful Events: 1) Other Vehicle
Left Turn into Opposing Traffic 2) N/A

Vehicle #1
Direction: East
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type:
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 35 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 7/12/2006 HOUR 8 AM REPORT NUMBER: 10693160

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: EO Intersection

Severity
Possible Injury Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 1 Pedestrians Injured: 0

Events
Collision Type: 02 Harmful Events: 1) Other Vehicle
Left Turn into Opposing Traffic 2) N/A

Vehicle #1
Direction: East
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 40 Rd Condition: Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 8/2/2006 HOUR 1 PM REPORT NUMBER: 10693840

Location
Route: CO 668 Mile: 0.33 County: 15 Municipality:
Name: WAYNE AVE Lane: EL Non-intersection

Severity
Possible Injury Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 2 Pedestrians Injured: 0

Events
Collision Type: 88 Other Harmful Events: 1) Parked Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Single Truck 2 Axles
Movement: Passing
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Changing Lanes
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Improper passing
2) What is Code 00?

DATE: 10/10/2006 HOUR 6 AM REPORT NUMBER: 10696036

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection-related

Severity
Disabled Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 1 Occupants Injured: 0 Pedestrians Injured: 1

Events
Collision Type: 17 Single Vehicle Harmful Events: 1) Pedestrian 2) N/A

Vehicle #1
Direction: South
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: N/A
Type: N/A
Movement: N/A
Drvr Cond: N/A

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 10/10/2006 HOUR 12 Noon REPORT NUMBER: 10696044

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection-related

Severity
Injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 1 Pedestrians Injured: 0

Events
Collision Type: 01 Head-On Harmful Events 1) Other Vehicle 2) Unknown

Vehicle #1
Direction: West
Type: Pickup Truck
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 35 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 10/13/2006 HOUR 6 PM REPORT NUMBER: 10696963

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: N3 Intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 04 Harmful Events: 1) Other Vehicle
Rear-End into Right Turning Vehicle 2) Unknown

Vehicle #1
Direction: North
Type: Automobile
Movement: Making Right Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: North
Type: Transit Bus
Movement: Starting from Parked Position
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: N
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Improper turn
2) What is Code 00?

DATE: 6/24/2007 HOUR 7 PM REPORT NUMBER: 10707424

Location
Route: CO 668 Mile: 0.33 County: 15 Municipality:
Name: WAYNE AVE Lane: W1 Driveway-Access

Severity
Injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 2 Pedestrians Injured: 0

Events
Collision Type: 03 Harmful Events: 1) Other Vehicle
Rear-End 2) Unknown

Vehicle #1
Direction: South
Type: Automobile
Movement: Accelerating
Drvr Cond: Apparently normal

Vehicle #2
Direction:: South
Type: Automobile
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 6/14/2007 HOUR 8 PM REPORT NUMBER: 10707114

Location
Route: CO 668 Mile: 0.3 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 88 Harmful Events: 1)
Other 2) Unknown

Vehicle #1
Direction: North
Type: Automobile
Movement: Backing Up
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Improper backing-up
2) What is Code 00?

DATE: 6/25/2007 HOUR 4 PM REPORT NUMBER: 10707472

Location
Route: CO 668 Mile: 0.33 County: 15 Municipality:
Name: WAYNE AVE Lane: W1 Non-intersection

Severity
Possible Injury Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 1 Pedestrians Injured: 0

Events
Collision Type: 14 Harmful Events: 1) Other Vehicle
2) Unknown

Vehicle #1
Direction: South
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Moped
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 35 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 4/30/2007 HOUR 4 PM REPORT NUMBER: 10705812

Location
Route: CO 668 Mile: 0.32 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Non-intersection

Severity
Not Injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 07 Harmful Events: 1) Other Vehicle
Sideswipe with Traffic 2) N/A

Vehicle #1
Direction: East
Type:
Movement: Changing Lanes
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Transit Bus
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 7/28/2007 HOUR 2 PM REPORT NUMBER: 10708379

Location
Route: CO 668 Mile: 0.32 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Non-intersection

Severity
Possible Injury Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 1 Pedestrians Injured: 0

Events
Collision Type: 03 Harmful Events: 1) Other Vehicle
Rear-End 2) N/A

Vehicle #1
Direction: East
Type: Automobile
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 35 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Following too closely
2) What is Code 00?

DATE: 5/12/2007 HOUR 1 PM REPORT NUMBER: 10706171

Location
Route: CO 668 Mile: 0.31 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 02 Harmful Events: 1) Other Vehicle
Left Turn into Opposing Traffic 2) N/A

Vehicle #1
Direction: West
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Accelerating
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 35 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 4/25/2007 HOUR 9 PM REPORT NUMBER: 10705698

Location
Route: CO 668 Mile: 0.3 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 07 Harmful Events: 1) Other Vehicle
Sideswipe with Traffic 2) N/A

Vehicle #1
Direction: East
Type: Transit Bus
Movement: Changing Lanes
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Raining Surface: Wet Light: Dark / Li Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Improper lane change
2) What is Code 00?

SHA State

Montgomery County Road Inventory

Dir	Route	Road Name	Mile	Route	Intersecting Road Name	Municipality
E	CO629	Fenton St	0.00	CO600	Cameron St	
E	CO629	Fenton St	0.00		Start Of Inventory	
E	CO629	Fenton St	0.11	US29	Colesville Rd	
E	CO629	Fenton St	0.16	CO643	Roeder Rd	
E	CO629	Fenton St	0.21	CO684	Ellsworth Dr	
E	CO629	Fenton St	0.32	CO668	Wayne Ave	
E	CO629	Fenton St	0.39	CO667	Bonifant St	
E	CO629	Fenton St	0.42	CO632	Easley St	
E	CO629	Fenton St	0.49	CO636	Thayer Ave	
E	CO629	Fenton St	0.54	CO2104	Alley	
E	CO629	Fenton St	0.58	CO637	Silver Spring Ave	
E	CO629	Fenton St	0.69	CO4592	Sligo Ave	
E	CO629	Fenton St	0.74	CO655	Gist Ave	
E	CO629	Fenton St	0.79	CO661	Philadelphia Ave	
E	CO629	Fenton St	0.85	MD410	Philadelphia Ave	
E	CO629	Fenton St	0.85		Traffic Signal	
E	CO629	Fenton St	0.90	CO2424	King St	
E	CO629	Fenton St	0.93	CO662	Islington St	
E	CO629	Fenton St	1.01	CO1388	New York Ave	
E	CO629	Fenton St	1.07		End Of Inventory	143-Takoma Park
E	CO629	Fenton St	1.07	MU455	Fenton St (Ahead)	143-Takoma Park

Division of Traffic Engineering and Operations

AIMS Accident Report Extract

Fenton Street at Wayne Ave (2003-2007)

Total Accidents: 27

Vehicle Occupants

Injured:	7
Killed:	0

Pedestrians

Injured:	2
Killed:	0

Harmful Events (Top 2)

Other Vehicle	20
Parked Vehicle	4

Accident Severity

Not injured	18
Possible Injury	1
Injured	1
Disabled	0
Fatal	0

Intersection Related

Non-intersection	11
Intersection	6
Intersection-related	10
Driveway-Access	0
Non-intersection	0
Intersection	0
Intersection-related	0
Driveway-Access	0
Other	0
Unknown	0

Contributing Circumstances (Top 2)

Failed to give full time/attention	17
Improper turn	3

Time Of Day

6:00 a.m. - 10:00 a.m.:	1	10:00 a.m. - 4:00 p.m.:	14	4:00 p.m. - 8:00 p.m.:	8	8:00 p.m. - 6:00 a.m.:	4

Weather

N/A	0
Clear / Cloudy	25
Foggy	0
Raining	2
Snow / Sleet	0
Severe winds	0
Other	0
Unknown	0

Road Surface

N/A	0
Wet	3
Dry	24
Snow	0
Ice	0
Mud	0
Other	0
Unknown	0

Illumination

N/A	0
Daylight	19
Dawn / Dusk	0
Dark / Lights on	7
Dark / No Lights	1
Other	0
Unknown	0

Collision Type

DATE: 2/14/2003 HOUR 10 AM REPORT NUMBER: 9729253

Location
Route: CO 629 Mile: 0.33 County: 15 Municipality:
Name: FENTON ST Lane: U9 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 88 Other Harmful Events: 1) Parked Vehicle 2) N/A

Vehicle #1
Direction: South
Type: Single Truck 2 Axles
Movement: Backing Up
Drvr Cond: Apparently normal

Vehicle #2
Direction:: N/A
Type: Single Truck 2 Axles
Movement: Parked
Drvr Cond: Unknown

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 35 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 3/4/2003 HOUR 11 AM REPORT NUMBER: 9280729

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: E1 Intersection-related

Severity
Injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 2 Pedestrians Injured: 0

Events
Collision Type: 3 Rear-End Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Automobile
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Van
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 4/4/2003 HOUR 6 PM REPORT NUMBER: 9728963

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 99 Unknown Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: Unknown
Type: Automobile
Movement: Unknown
Drvr Cond: Unknown

Vehicle #2
Direction:: West
Type: Recreational Vehicle
Movement: Making Right Turn
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 5/15/2003 HOUR 3 PM REPORT NUMBER: 9048820

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 2 Harmful Events: 1) Other Vehicle
Left Turn into Opposing Traffic 2) Unknown

Vehicle #1
Direction: East
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) Exceeding speed limit

DATE: 8/1/2003 HOUR 10 PM REPORT NUMBER: 9017397

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: SL Intersection

Severity
Possible Injury Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 1 Pedestrians Injured: 0

Events
Collision Type: 2 Harmful Events: 1) Other Vehicle
Left Turn into Opposing Traffic 2) N/A

Vehicle #1
Direction: South
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: North
Type: Recreational Vehicle
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / N Traffic Signal: Y
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 8/22/2003 HOUR 1 PM REPORT NUMBER: 9728998

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Intersection-related

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 3 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 88 Harmful Events: 1) Pedestrian
Other 2) Other Vehicle

Vehicle #1
Direction: East
Type: Automobile
Movement: Making Right Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: North
Type: Pickup Truck
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 8/22/2003 HOUR 2 PM REPORT NUMBER: 9728999

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: S1 Intersection-related

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 3 Rear-End Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: South
Type: Recreational Vehicle
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Vehicle #2
Direction:: South
Type: Recreational Vehicle
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 11/13/2003 HOUR 7 PM REPORT NUMBER: 9728821

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: E1 Intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 2 Left Turn into Opposing Traffic Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to yield right-of-way
2) What is Code 00?

DATE: 12/23/2003 HOUR 2 PM REPORT NUMBER: 9729601

Location
Route: CO 629 Mile: 0.34 County: 15 Municipality:
Name: FENTON ST Lane: W1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 17 Single Vehicle Harmful Events: 1) Parked Vehicle 2) N/A

Vehicle #1
Direction: Unknown
Type: Unknown
Movement: Unknown
Drvr Cond: Apparently normal

Vehicle #2
Direction:: N/A
Type: Automobile
Movement: Parked
Drvr Cond: Unknown

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Improper passing
2) What is Code 00?

DATE: 1/28/2004 HOUR 1 PM REPORT NUMBER: 8050490

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: E1 Intersection-related

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 3 Rear-End Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Pickup Truck
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Pickup Truck
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Wet Light: Daylight Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 4/6/2004 HOUR 12 Noon REPORT NUMBER: 9751665

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Intersection-related

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 14 Harmful Events: 1) Other Vehicle 2) Unknown

Vehicle #1
Direction: North
Type: Single Truck 2 Axles
Movement: Making Right Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Transit Bus
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 4/21/2004 HOUR 6 PM REPORT NUMBER: 9990853

Location
Route: CO 629 Mile: 0.33 County: 15 Municipality:
Name: FENTON ST Lane: NS Non-Intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 88 Other Harmful Events: 1) Parked Vehicle 2) N/A

Vehicle #1
Direction: North
Type: Automobile
Movement: Starting from Parked Position
Drvr Cond: Apparently normal

Vehicle #2
Direction:: N/A
Type: Automobile
Movement: Parked
Drvr Cond: Unknown

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 5/28/2004 HOUR 8 PM REPORT NUMBER: 8014571

Location Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Intersection-related

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 7 Harmful Events: 1) Other Vehicle
Sideswipe with Traffic 2) Unknown

Vehicle #1 Direction: West
Type: Single Truck 2 Axles
Movement: Changing Lanes
Drvr Cond: Unknown

Vehicle #2 Direction:: West
Type: Recreational Vehicle
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes: 1) Failed to give full time/attention
2) What is Code 00?

DATE: 9/16/2004 HOUR 5 PM REPORT NUMBER: 8614216

Location Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Intersection

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 7 Harmful Events: 1) Other Vehicle
Sideswipe with Traffic 2) Unknown

Vehicle #1 Direction: West
Type: Transit Bus
Movement: Changing Lanes
Drvr Cond: Apparently normal

Vehicle #2 Direction:: West
Type: Van
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and grade

Causes: 1) Failed to give full time/attention
2) What is Code 00?

DATE: 1/5/2005 HOUR 8 AM REPORT NUMBER: 0509991283

Location Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Intersection

Severity Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 07 Harmful Events: 1) Other Vehicle
Sideswipe with Traffic 2) Unknown

Vehicle #1 Direction: North
Type: Transit Bus
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Vehicle #2 Direction:: North
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions: Weather: Raining Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and grade

Causes: 1) Failed to give full time/attention
2) Failed to give full time/attention

DATE: 1/13/2005 HOUR 6 PM REPORT NUMBER: 0509986790

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: E1 Intersection

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 07 Sideswipe with Traffic
Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Recreational Vehicle
Movement: Changing Lanes
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Transit Bus
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Wet Light: Dark / Li Traffic Signal: N
Spd Lmt: Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Failed to obey traffic signal
2) What is Code 00?

DATE: 1/13/2005 HOUR 7 PM REPORT NUMBER: 0509986791

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: E1 Intersection-related

Severity
Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events
Collision Type: 07 Sideswipe with Traffic
Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: East
Type: Pickup Truck
Movement: Changing Lanes
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Transit Bus
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Wet Light: Dark / Li Traffic Signal: N
Spd Lmt: Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Improper turn
2) What is Code 00?

DATE: 4/24/2005 HOUR 1 PM REPORT NUMBER: 0510544410

Location
Route: CO 629 Mile: 0.33 County: 15 Municipality:
Name: FENTON ST Lane: E1 Non-intersection

Severity
Vehicles Involved: 1 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 2

Events
Collision Type: 17 Single Vehicle
Harmful Events: 1) Pedestrian 2) Pedestrian

Vehicle #1
Direction: N/A
Type: Automobile
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: N/A
Movement: N/A
Drvr Cond: N/A

Conditions:
Weather: Raining Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: Rd Condition: No defects Road Character: Straight and grade

Causes:
1) What is Code 00?
2) What is Code 00?

DATE: 7/7/2005 HOUR 12 MN REPORT NUMBER: 0509140854

Location Route: CO 629 Mile: 0.33 County: 15 Municipality:
Name: FENTON ST Lane: S2 Intersection-related

Severity Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 2 Pedestrians Killed: 0 Pedestrians Injured: 0

Events Collision Type: 03 Rear-End Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1 Direction: South Type: Automobile Movement: Slowing / Stopping Drvr Cond: Unknown

Vehicle #2 Direction:: South Type: Automobile Movement: Slowing / Stopping Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes: 1) Failed to give full time/attention
2) What is Code 00?

DATE: 12/12/2005 HOUR 2 PM REPORT NUMBER: 0510518060

Location Route: CO 629 Mile: 0.34 County: 15 Municipality:
Name: FENTON ST Lane: WR Non-intersection

Severity Vehicles Involved: 2 Occupants Killed: 0 Occupants Injured: 0 Pedestrians Killed: 0 Pedestrians Injured: 0

Events Collision Type: 07 Sideswipe with Traffic Harmful Events: 1) Other Vehicle 2) Unknown

Vehicle #1 Direction: West Type: Transit Bus Movement: Changing Lanes Drvr Cond: Apparently normal

Vehicle #2 Direction:: West Type: Automobile Movement: Starting from Traffic Lane Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: Rd Condition: No defects Road Character: Straight and level

Causes: 1)
2) What is Code 00?

DATE: 12/28/2005 HOUR 10 AM REPORT NUMBER: 0510122592

Location Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: E1 Intersection-related

Severity Vehicles Involved: 5 Occupants Killed: 0 Occupants Injured: 2 Pedestrians Killed: 0 Pedestrians Injured: 0

Events Collision Type: 03 Rear-End Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1 Direction: East Type: Automobile Movement: Accelerating Drvr Cond: Apparently normal

Vehicle #2 Direction:: East Type: Automobile Movement: Slowing / Stopping Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: Rd Condition: No defects Road Character: Straight and grade

Causes: 1) Failed to give full time/attention
2) What is Code 00?

DATE: 3/1/2006 HOUR 4 PM REPORT NUMBER: 10689025

Location
Route: CO 629 Mile: 0.34 County: 15 Municipality:
Name: FENTON ST Lane: W1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 07 Sideswipe with Traffic
Harmful Events: 1) Other Vehicle 2) Unknown

Vehicle #1
Direction: West
Type: Automobile
Movement: Passing
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Transit Bus
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Too fast for conditions
2) What is Code 00?

DATE: 8/6/2006 HOUR 4 PM REPORT NUMBER: 10693926

Location
Route: CO 629 Mile: 0.34 County: 15 Municipality:
Name: FENTON ST Lane: S1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 3 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 13 Turning Left into Opposing Traffic
Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1
Direction: West
Type: Automobile
Movement: Making Left Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction:: South
Type: Van
Movement: Moving at Constant Speed
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Failed to give full time/attention
2) What is Code 00?

DATE: 8/8/2006 HOUR 8 PM REPORT NUMBER: 10693993

Location
Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: S1 Non-intersection

Severity
Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 88 Other
Harmful Events: 1) What is Code 20? 2) Unknown

Vehicle #1
Direction: North
Type:
Movement: Making U-Turn
Drvr Cond: Apparently normal

Vehicle #2
Direction: South
Type: Transit Bus
Movement: Slowing / Stopping
Drvr Cond Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Dark / Li Traffic Signal: Y
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Improper turn
2) What is Code 00?

DATE: 5/26/2007 HOUR 11 AM REPORT NUMBER: 10706558

Location Route: CO 629 Mile: 0.31 County: 15 Municipality:
Name: FENTON ST Lane: E1 Non-intersection

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 99 Unknown Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1 Direction: N/A Type: Automobile Movement: Unknown Drvr Cond: N/A

Vehicle #2 Direction:: East Type: Automobile Movement: Accelerating Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and grade

Causes: 1) Failed to give full time/attention
2) What is Code 00?

DATE: 3/27/2007 HOUR 11 AM REPORT NUMBER: 10701674

Location Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: W1 Intersection-related

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 88 Other Harmful Events: 1) Parked Vehicle 2) N/A

Vehicle #1 Direction: South Type: Transit Bus Movement: Making Right Turn Drvr Cond: Apparently normal

Vehicle #2 Direction:: N/A Type: Single Truck 2 Axles Movement: Parked Drvr Cond: N/A

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes: 1) Improper turn
2) Improper parking

DATE: 10/3/2007 HOUR 2 PM REPORT NUMBER: 10710372

Location Route: CO 629 Mile: 0.32 County: 15 Municipality:
Name: FENTON ST Lane: N4 Non-intersection

Severity Not injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events Collision Type: 07 Sideswipe with Traffic Harmful Events: 1) Other Vehicle 2) N/A

Vehicle #1 Direction: North Type: Single Truck 2 Axles Movement: Accelerating Drvr Cond: Apparently normal

Vehicle #2 Direction:: North Type: Transit Bus Movement: Accelerating Drvr Cond: Apparently normal

Conditions: Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: Y
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and grade

Causes: 1) What is Code 00?
2) What is Code 00?

DATE: 1/23/2003 HOUR 8 AM REPORT NUMBER: 8072932

Location
Route: CO 668 Mile: 0.33 County: 15 Municipality:
Name: WAYNE AVE Lane: W3 Non-intersection

Severity
Possible Injury Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 1 Pedestrians Injured: 0

Events
Collision Type: 3 Rear-End Harmful Events: 1) Other Vehicle 2) Unknown

Vehicle #1
Direction: West
Type: Automobile
Movement: Slowing / Stopping
Drvr Cond: Apparently normal

Vehicle #2
Direction:: West
Type: Automobile
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Clear / Cloudy Surface: Dry Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Straight and level

Causes:
1) Following too closely
2) What is Code 00?

DATE: 5/23/2003 HOUR 9 PM REPORT NUMBER: 9172786

Location
Route: CO 668 Mile: 0.33 County: 15 Municipality:
Name: WAYNE AVE Lane: E2 Non-intersection

Severity
Not Injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 88 Other Harmful Events: 1) Parked Vehicle 2) N/A

Vehicle #1
Direction: Unknown
Type: Recreational Vehicle
Movement: Unknown
Drvr Cond: N/A

Vehicle #2
Direction:: N/A
Type: Station Wagon
Movement: Parked
Drvr Cond: Unknown

Conditions:
Weather: Raining Surface: Wet Light: Dark / Li Traffic Signal: N
Spd Lmt: 25 Rd Condition: No defects Road Character: Straight and grade

Causes:
1) Too fast for conditions
2) What is Code 00?

DATE: 9/12/2003 HOUR 1 PM REPORT NUMBER: 9729590

Location
Route: CO 668 Mile: 0.33 County: 15 Municipality:
Name: WAYNE AVE Lane: E1 Non-intersection

Severity
Not Injured Occupants Killed: 0 Pedestrians Killed: 0
Vehicles Involved: 2 Occupants Injured: 0 Pedestrians Injured: 0

Events
Collision Type: 7 Sideswipe with Traffic Harmful Events: 1) Other Vehicle 2) Unknown

Vehicle #1
Direction: East
Type: Van
Movement: Skidding
Drvr Cond: Apparently normal

Vehicle #2
Direction:: East
Type: Recreational Vehicle
Movement: Stopping in Traffic Lane
Drvr Cond: Apparently normal

Conditions:
Weather: Raining Surface: Wet Light: Daylight Traffic Signal: N
Spd Lmt: 30 Rd Condition: No defects Road Character: Curve and grade

Causes:
1) Too fast for conditions
2) What is Code 00?

SUPPLEMENTAL PEDESTRIAN ANALYSIS
SILVER SPRING REGIONAL LIBRARY
MONTGOMERY COUNTY, MARYLAND

Prepared For:

Montgomery County Department of Public Libraries

Date: January 2010

Project Manager: Carl F. Starkey, P.E.

STS Job No.: 5790

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INTRODUCTION

The Montgomery County Department of Public Libraries is relocating the existing Silver Spring Library from its present location at the corner of Colesville Road and Spring Street to the southwest quadrant of the intersection of Fenton Street and Wayne Avenue, in the Silver Spring area of Montgomery County, Maryland. The overall project will include a 65,000 square foot library, a 20,000 square foot arts center, and 15,000 square feet of office space for use by the Montgomery County government, as well as a future separate project with 146 residential hi-rise units and 22,000 square feet of retail space.

It is anticipated that a total of 108 person trips (pedestrians) will be generated during the evening peak hour (to and from the library). Combining these trips with the existing pedestrian movements at the intersection of Fenton Street and Wayne Avenue results in a peak hour flow of 245 pedestrians within the west leg crosswalk. This value can easily be accommodated with the existing facilities available at the intersection. The estimated pedestrian volumes would result in a Level of Service "C" applying methodologies found in the 2000 Edition of the Highway Capacity Manual (HCM).

EXISTING CONDITIONS

Existing Roadway Network

The proposed Silver Spring Library development site is served regionally by Colesville Road (US 29) and Georgia Avenue (MD 97). Local access is provided by Fenton Street and Wayne Avenue. The characteristics of these roads are described below.

Colesville Road (US 29) is a major road in the state highway system. It starts in Howard County and winds through Montgomery County to its terminus at Sixteenth Street at the Montgomery County/District of Columbia border. In the vicinity of the site it is generally a variable width undivided roadway with reversible lanes for peak direction traffic. Colesville Road serves as a major north-south commuter route. The posted speed limit in the vicinity of the site is 30 mph.

Georgia Avenue (MD 97) is also a major road in the state highway system. It follows a generally north-south orientation and has a six-lane divided cross section. Georgia Avenue extends northward from the District of Columbia and travels through Montgomery County into Carroll County, Maryland. Georgia Avenue also acts as a major commuter link between Montgomery County and the District of Columbia.

Fenton Street is an arterial roadway in the Montgomery County Master Plan of Highways. It has a north-south orientation and serves as an alternate route for north-south travel within the Silver Spring Central Business District (CBD). Fenton Street extends southward from its terminus at Cameron Street into the town of Takoma Park. It has a posted speed limit of 25 mph.

Wayne Avenue is also an arterial roadway in the Montgomery County Master Plan of Highways. It will serve as the main access for parking for the project. Montgomery County Garage #60 will act as the primary parking supply for the project.

TRANSIT OPPORTUNITIES

The Silver Spring CBD is served by the Washington Metropolitan Area Transit Authority's (WMATA) Silver Spring Metro Station, WMATA regional bus service, Montgomery County's RideOn bus service, and the Maryland Transit Administration's MARC commuter rail service.

The Silver Spring Metro Station (Red Line) is located at the intersection of Colesville Road and Wayne Avenue. Service is provided at three to six minute headways during the peak periods and twelve minute headways during non-peak periods.

MARC commuter rail service is provided on three lines which serve the Washington - Baltimore corridor and terminates at the WMATA Union Station Metro Station in the District of Columbia. MARC platforms are located within the Silver Spring Metro Station, and service is provided during peak commuting periods only.

WMATA regional bus service is operated throughout the CBD with all lines stopping at the Silver Spring Metro Station. WMATA currently operates routes J1, J2, and J3 between Silver Spring and the Montgomery Mall Transit Center. The J5 route operates between Silver Spring and the Twinbrook Metro Station.. Routes Y5, Y7, Y8 and Y9 operate between Silver Spring and Montgomery General Hospital in Olney, Maryland. Additionally, WMATA operates routes F4 and F6 between Silver and the New Carrollton Metro Station.

Montgomery County's RideOn service operates numerous routes, all with stops at the Silver Spring Metro Station, including Route 28 (Van Go) which operates as a free local shuttle within the Silver Spring CBD. Overall, the area is well served by transit with direct connections to the Silver Spring Metro Station.

In addition, the Purple Line Light Rail will also serve the site, with a stop along Fenton Street.

The above opportunities enhance access to the relocated library. It should also be noted that there is an existing bus stop and shelter at the intersection of Fenton Street and Wayne Avenue in the southwest quadrant. There is a second bus stop at the intersection of Fenton Street and Bonifant Street.

EVALUATION OF ALTERNATIVES

Maryland National Capital Park & Planning Commission Suggestions

The Maryland National Park & Planning Commission (MNCPPC) of Montgomery County has requested a review of two modifications to the existing operations at the critical intersection of Fenton Street and Wayne Avenue. First, staff has requested a review of an all pedestrian phase or "Barnes Dance" at the intersection, and secondly a review of the inclusion of a pedestrian median refuge. A discussion of each suggestion is provided below.

Barnes Dance Pedestrian Operation

The Barnes Dance concept involves the elimination of vehicles from the movement of pedestrians. In effect, this creates a separate (additional) phase for the traffic signal operation. Based on total traffic conditions, the subject intersection is currently projected to operate at Levels of Service "E" (CLV of 1473) and "D" (CLV of 1423), for vehicular traffic, during the morning and evening peak hours after completion of the library and other planned developments in the greater Silver Spring area. Inclusion of an additional phase to the traffic signal would equate to an increase of 545 critical lane movements (CLV) movements. A value of 545 CLV movements equates to the total time required to allow a diagonal crossing of the farthest distance at the intersection. This would operate as 7 seconds of Walk time, 30 Seconds of Flashing Don't Walk time and 3 seconds of clearance before the next phase in the cycle. The addition of 545 CLV movements would result in a Level of Service F during each peak hour, with a maximum CLV value of 2018. This value not only represents Level of Service "F", it exceeds the Policy Area Threshold value of 1800. In addition, the subject location would become the most congested intersection in the County, based on the 2009 Highway Mobility report (a MNCPPC publication). All vehicular traffic would be required

to experience an additional 40 seconds of delay, and Purple Line operations would also be impacted. Therefore, for these reasons, we do not recommend a Barnes Dance for pedestrian movements at the subject location.

Pedestrian Median Refuge

MNCPPC staff suggested installation of a pedestrian refuge island at the intersection of Fenton Street and Wayne Avenue.

It is important to note that the use of a pedestrian refuge at the subject location would require installation of a median, loss of a travel lane, or a reduction in width of the existing lanes. STS LTD evaluated the impact of the loss of the existing left turn lane to create a refuge island. The introduction of a median along Wayne Avenue would increase the CLV of the intersection since left turning vehicles would be shifted into the eastbound thru lanes, thus increasing the volumes of traffic being served by the existing two thru lanes.

The loss of a full travel lane would have a more adverse impact, because the overall capacity of the Wayne Avenue would be reduced. That is, eastbound Wayne Avenue would be reduced to one travel lane. Furthermore, a single travel lane would create queues which would impact access to Garage #60. That is, the eastbound queue would extend beyond the driveway(s) which serve Garage #60, thus access to and from the garage would be restricted. Reducing the width of the existing travel lanes is not feasible, since it would not result in a sufficient width median. MNCPPC staff recommends a median width of eight (8) feet for pedestrian storage, and a minimum of 6 feet is desired. A reduction to ten (10) foot travel lanes would yield only a four (4) foot median. Thus, the MNCPPC standard would not be met. Finally, pedestrian traffic signals within Montgomery County are timed to allow a full crossing of the width of the roadway, without the need to stop within the crosswalk.

PEDESTRIAN ANALYSIS

MNCPPC has requested a specific review of pedestrian movements at the intersection Wayne Avenue and Fenton Street to ensure adequate pedestrian capacity at the location once the library has relocated to the intersection. Pedestrian movement data was collected at the existing library, as well as the intersection of Wayne Avenue and Fenton Street.

Pedestrian movements at the new location, Wayne Avenue and Fenton Street, were observed on Thursday, April 16, 2009. Based on this data the crosswalk located on the west leg of the intersection (this crossing is anticipated to be used by future library visitors) is currently serving a maximum of 137 pedestrian movements (two-way) in the evening peak hour.

The data collection at the existing library facility was conducted on Wednesday, April 22, 2009, to evaluate person trips at the library entrances during the peak periods. Based on the data, we anticipate a total of 108 person trips; i.e. pedestrians during the evening peak hour (to and from the library).

Combining these trips with the existing crossings results in a peak hour flow of 245 pedestrians within the west leg crosswalk. This value can easily be accommodated with the existing facilities available at the intersection. The estimated volumes would result in a Level of Service "C" applying methodologies found in the Highway Capacity Manual (HCM). A second scenario was reviewed to account for any increases associated with the Purple Line. The Traffic Analysis Technical Report, dated September 2008, prepared for the Purple Line estimated a daily total of 700 boardings at the Fenton Street Station in 2030. The Maryland Transit Administration (MTA) consultant's project the peak hour will be about 12% of the daily value or 84 boardings. Given the these trips will arrive from all directions towards the station, STS LTD estimated that 30% of the pedestrian trips will use the subject crosswalk. Thus, it is estimated that an additional

25 peak pedestrian movements will occur. Adding this value to the 245 results in a total of 270 movements per hour (two-way). Again, this level of pedestrians can be adequately accommodated. As a measure of pedestrian movements in the area, STS LTD reviewed maximum pedestrian crossing at other Silver Spring CBD intersections. A review of the intersection of Colesville Road and Georgia Avenue indicated that a maximum of 424 pedestrian movements occur during the evening peak hour for the south leg crossing, a crosswalk similar to the subject location. This value well exceeds the maximum estimated volume of 270 pedestrians per hour. Therefore, it is our opinion that the subject crosswalk will operate at an acceptable level after completion of the library and Purp Line Light Rail.

Furthermore, the intersection of Wayne Avenue and Fenton Street currently has countdown pedestrian signals which enable pedestrians to discern the amount of time remaining to cross the intersection safely. It is important to note that the total pedestrian crossing time at a signalized crossing is made up of both the WALK (white hand) and the FLASHING DON'T WALK (flashing orange hand or countdown time in seconds) time period.

ACCIDENT HISTORY

A review of accident history for the intersection of Fenton Street and Wayne Avenue for the period January 2003 through December 2007 indicated a total of 56 accidents at or near the intersection during the five (5) year period, an average of about 11 accidents per year.

There were a total of two (2) accidents involving a pedestrian at the intersection. One occurred in April 2005, and the other October 2006. Each accident involved a single vehicle. Given the lack of a pattern of pedestrian related accidents, and the absence of a reported accident in the last year of available data, it is our opinion that pedestrian safety is not a concern at this time. Notwithstanding, further studies will be undertaken after completion of the Purple Station to ensure adequate pedestrian safety in the future.

CONCLUSIONS

The foregoing analyses demonstrate that the relocated Silver Spring Library will not adversely effect pedestrian movements within the immediate vicinity of the intersection of Wayne Avenue and Fenton Street.

A review of MNCPPC suggestions demonstrates that the use of a refuge island would adversely impact vehicular operations and produce queues which, in turn, would impact access to Garage #60 which serves the library. Also, the use of a Barnes Dance movement for pedestrians would create excessive delays for both passenger and transit vehicles (Purple Line). In addition, the intersection would operate at Level of Service "F" during the peak periods, and become the worst operating location in the County based on the 2009 Highway Mobility report.

It is anticipated that a total of 108 person trips (pedestrians) will be generated during the evening peak hour (to and from the library). Combining these trips with the existing pedestrian movements at the intersection of Fenton Street and Wayne Avenue results in a peak hour flow of 245 pedestrians within the west leg crosswalk. This value can easily be accommodated with the existing facilities available at the intersection. The estimated volumes would result in a Level of Service "C" applying methodologies found in the 2000 Edition of the Highway Capacity Manual (HCM). Therefore, the pedestrian analyses concluded that operations can be accommodated at the existing crosswalk with optimal levels of service for pedestrian movements. In addition, accident history for the critical intersection of Fenton Street and Wayne Avenue produced no evidence of any pedestrian/vehicle conflicts. Thus, we can anticipate a continued safe environment for pedestrians given the existing countdown pedestrian signals and adequate crosswalk markings.